This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

ANNEX

THE UNIVERSITY PUBLICATION
Volume II. No. 4

341372

REPORTS

OF

THE PRESIDENT AND THE TREASURER

OF

HARVARD COLLEGE

1903—04

CAMBRIDGE, MASS.
Published by Harvard University
JANUARY 30, 1905

REPORTS

OF

THE PRESIDENT AND THE TREASURER

OF

HARVARD COLLEGE

1903–04

CAMBRIDGE
Published by the University
1905

C. W. H.

THE NEW YORK
PUBLIC LIBRARY
341372

ASTOR, LENOX AND
TILDEN FOUNDATIONS.
1905

CONTENTS.

Pages

PRESIDENT'S REPORT 5–52

REPORTS OF DEPARTMENTS: —

The Faculty of Arts and Sciences 53–98
The College 99–114
The Lawrence Scientific School 115–117
Athletic Sports 118–127
The Graduate School 128–166
The Divinity School 167–176
The Law School 177–181
The Faculty of Medicine 182, 183
The Medical School 184–203
The Dental School 204–207
The Bussey Institution 208
The Library 209–235
The Gray Herbarium 236–240
The Botanic Garden 241–244
The Arnold Arboretum 245, 246
The Chemical Laboratory 247–253
The Jefferson Physical Laboratory 254–256
The Division of Engineering 257–260
The Psychological Laboratory 261–263
The Observatory 264–275
The Museum of Comparative Zoölogy 276, 277
The Zoölogical Laboratory 278–284
The Department of Geology and Geography . . . 285–291
The Department of Mining and Metallurgy . . . 292–297
The Mineralogical Museum and Laboratories of Mineralogy and Petrography 298, 299
The Peabody Museum of American Archaeology and Ethnology 300–306
The Semitic Museum 307, 308
The Fogg Art Museum 309–312
The Germanic Museum 313–318
Radcliffe College 319–322

APPENDIX 323–354

INDEX 355–360

TREASURER'S STATEMENT 1–105

PRESIDENT'S REPORT FOR 1903-04.

To the Board of Overseers: —

The President of the University has the honor to submit the following report for the academic year 1903–04, — namely, from October 1, 1903, to September 29, 1904.

Samuel Hoar, Overseer 1887–1894, and Fellow 1894–1904, died on the 11th of April, 1904, in the fifty-ninth year of his age.

The untimely death of Samuel Hoar was a great public loss. He was a strong lawyer, ready for combat, eager in attack, firm in defence, a public-spirited citizen who believed in the New England liberties and the New England democracy, and a steady supporter of all the institutions through which a free people maintains learning and piety. His professional knowledge and experience were always at the service of the President and Fellows. His quick grasp of difficult subjects and his sagacious courage enlightened and animated his colleagues, while his disinterestedness and cheerfulness encouraged them in all their efforts to serve well the University and American education.

George Frisbie Hoar, Overseer 1873–1879 and 1896–1904, died on the 30th of September, 1904, in the seventy-ninth year of his age.

He was three times chosen an Overseer by the alumni, and was always glad to give his counsel to the University, so far as the engrossing duties of his public functions permitted; but the chief way in which he served the University was by illustrating on the most conspicuous stage the republican ideal of a public life inspired by worthy sentiments and affections, simple, disinterested, and earnest, and guided by well-read lessons from history and biography, and a deep-rooted religious faith. All his life he stood for the old-fashioned New England virtues of the modest home, the county court-house, the town meeting, and the village church. The local conditions which moulded him have changed, and he is probably the last of his type — a noble type.

The number of deaths among the students in Cambridge was a little larger in 1903–04 than in the preceding year. There were in all twelve deaths, of which seven occurred away from the University and five in Cambridge. Of these last, four occurred at the Stillman Infirmary, — two of pneumonia and two of appendicitis. There was no death during the year in the teaching staff — 550 persons.

At the close of the year Professor Adams Sherman Hill resigned the Boylston Professorship of Rhetoric and Oratory, a professorship established by the College one hundred years before (in 1804), and held by only five persons during the hundred years, — John Quincy Adams, Joseph McKean, Edward Tyrrel Channing, Francis James Child, and Adams Sherman Hill. Professor Hill was first appointed to an assistant professorship in 1872, and was promoted to the Boylston Professorship in 1876. He had therefore served in the English Department for thirty-two years, and had been the head of the Department for twenty-eight years, especially in that work of the Department which relates to the writing and speaking of good English. By his published books on this subject his influence has been extended far beyond the walls of the University. When he entered the service of the College, there was no examination in English for admission; and there was hardly a secondary school in the country which gave systematic instruction in English literature or in the accurate writing of English. In the great change which has come over American colleges and secondary schools in this respect Professor Hill has been an inspiring leader and a judicious guide. The native language has won a place in both schools and colleges, and a new generation of teachers of English has been trained for their service. Although retired, Professor Hill continues to direct an advanced course in writing English which he instituted and has long taught effectively.

Dr. John Orne Green, who had taught otology in the Medical School for thirty-three years as lecturer, instructor, and professor, resigned at the end of the year 1903–04. The rules of the best Boston hospitals, which set a rather early age limit to the active service of their physicians and surgeons, cause the Medical School to lose the services of valued clinical professors at an age which, in some instances, seems unnecessarily early. It is not for the University, however, to question the wisdom of these rules, which are the result of long experience and of disinterested regard for the welfare of hospital patients.

Dr. Thomas Fillebrown, a graduate of the Harvard Dental School in 1869 with its first Class, and Professor of Operative Dentistry from 1883 to 1904, resigned his office at the close of the year under consideration, because he felt that he was reaching the limit of age which every clinical professor should respect, whether in hospital service or not. Dr. Fillebrown's influence as a professor in the Dental School was always in favor of a high standard for admission, of a long School course, and of effective work during the whole course. He contributed actively to the building up of the School in numbers and efficiency.

Professor William Barker Hills, instructor in chemistry from 1874 to 1884, assistant professor in the Medical School from 1884 to 1889, and associate professor in the same School from 1889 to 1904, resigned his office at the close of the year, and took charge of a laboratory devoted to the various chemical and physiological testings which are now applied to candidates for life insurance — a very useful kind of work, for which his training and experience had admirably fitted him.

The School of Veterinary Medicine having ceased to exist, and the President and Fellows having, at the recommendation of the Faculty of Arts and Sciences, reinstituted the degree of Mining Engineer and instituted the degree of Metallurgical Engineer, the statutes of the University were amended by striking out all reference to the School of Veterinary Medicine, and by inserting the words "Mining Engineer, Metallurgical Engineer" after the words "Civil Engineer" in the 9th Statute. It is the expectation of the Faculty of Arts and Sciences to recommend persons for the degree of Mining Engineer or

Metallurgical Engineer who complete one year of approved study after receiving the degree of Bachelor of Science in mining and metallurgy.

The new opportunity to take degrees in the middle of the year was used by forty persons in March, 1904, although the notice of the opportunity had been but short. The degrees taken were distributed as follows: —

A.B.	S.B.	A.M.	Ph.D.	D.M.D.	M.D.	LL.B.	S.T.B.
19	3	2	1	1	12	1	1

Some of these forty persons had come in the middle of the year to the natural close of their studies; and some had made up deficiencies in their earlier records. For practical reasons all were glad to get their respective degrees as soon as they were entitled to them. This is another evidence of the immediate pecuniary and social value of university degrees.

On the 25th of April, 1904, the President and Fellows received from the Board of Overseers the following resolution which had been unanimously adopted by that Board on April 13th: —

> "*Resolved*, that the Board of Overseers request the President and Fellows either to take action in conformity with the recommendation of the Committee on Fine Arts and Architecture in regard to an advisory committee of experts to be consulted respecting the buildings of the University, or to devise a preferable scheme for the accomplishment of the end in view, and to report their proceedings in the matter to this Board."

Whereupon the President and Fellows requested the Overseers to appoint a committee of three to confer with two members of the Corporation on this subject.

In June the Board of Overseers appointed Messrs. Norton, Hemenway, and Grant, a committee of conference on the subject presented in the above resolution of the Board. The President of the University and Dr. Arthur T. Cabot had already been appointed on behalf of the Corporation. This joint committee held a conference on the subject, discussing several methods of operation, but deciding on none. The President and Fellows subsequently decided to try one of the methods which had been mentioned at the conference, namely, that every new site for a building and the plans for every new building should be submitted to a committee formed from among the surviving architects who had served the University professionally. They accordingly invited a committee, consisting of Messrs. Robert S. Peabody, Francis W. Chandler, and George R. Shaw, to examine the plans submitted by Messrs. Shepley, Rutan, and Coolidge for a building to be annexed to Austin Hall, and to give their advice to the Corporation. This committee made a careful study of the subject, and then advised the President and Fellows not to execute the design prepared by Messrs. Shepley, Rutan, and Coolidge from instructions given by members of the Law Faculty, and not to put any building on the site which had been suggested for the new design. Messrs. Shepley, Rutan, and Coolidge added their names to the report of the committee to indicate that the judgment of the committee was the same as their own. The advice procured in this manner has arrested the project, and no new one has taken its place, much to the regret of the Law Faculty.

This method of procuring professional advice concerning new sites and buildings commended itself to the Corporation and to the architects concerned. The plan is, therefore, likely to be tried again at the next opportunity. When the Corporation offered to compensate the advising committee, all three members declined compensation.

On the 16th of May, 1904, the President and Fellows received the following communication from the Corporation of the Massachusetts Institute of Technology: —

Charles W. Eliot, Esq.,
President, Harvard University, Cambridge, Massachusetts.

Dear Sir: —

At a meeting of the Corporation of the Massachusetts Institute of Technology, held on May 4, the following resolution was passed: —

"*Voted*, that the Executive Committee be requested to ascertain whether any arrangement can be made with Harvard University for a combination of effort in technical education such as will substantially preserve the organization, control, traditions, and the name of the Massachusetts Institute of Technology."

In compliance with this action the Executive Committee of the Corporation of the Institution has appointed Mr. Henry S. Pritchett and Mr. A. Lawrence Lowell as a sub-committee to confer with the Corporation of Harvard University, or with another committee which it may appoint.

Sincerely yours,

(Signed) Henry S. Pritchett,
President.

May 13, 1904.

The President and Fellows immediately voted that a committee be appointed to confer with the above-mentioned sub-committee of the Corporation of the Massachusetts Institute of Technology; and the President appointed Dr. Walcott and the Treasurer, Mr. Adams, to serve on the committee of conference. This joint committee has had the subject under advisement ever since last May, but has not yet produced a definite scheme for bringing about the proposed combination of effort on behalf of technical education.

In March, 1904, the Corporation ordered that from and after August 31, 1904, the tuition-fee should be paid in advance by every student in the Cambridge departments of the University as follows: (1) within two weeks of the beginning of the academic year three-fifths of his year's fee, or the whole of his year's fee if it does not exceed three-fifths of the maximum fee for the year in the department to which he belongs; (2) before the beginning of the second half-year the remainder of his fee for the year. They also directed that from the same date term-bills should be issued by the Bursar for all dues to the University not tuition-fees, and should be paid as follows: the first term-bill before the beginning of the second half-year, and the second term-bill by all candidates for degrees at least one day before Commencement and by all other students on or before July 25.

Students in the Boston Departments of the University were required, from and after September 1, 1904, to pay in advance the dues incurred in these departments, as follows: Tuition-fees in accordance with the vote of March 28, 1904, and the matriculation fee at the beginning of the academic year, the laboratory fees and other similar fees at the beginning of the year or half-year at which the instruction is given, and the examination fees for the removal of conditions at least one day before the examinations are given.

It had been the custom of the University to give long credit for the payment of tuition-fees and all other charges. Thus, a student who began his work at the end of September was not supposed to make any payment to the University for at least four months, and payment was often much longer delayed. Again, the bills for the second half-year were not supposed to be due till the following October. This custom was, of course, disadvantageous to the University through loss of interest. It was contrary to the practice of American institutions of education in general; and was believed by most of the administrative officers of the University to be less expedient for the students themselves than payment in advance. The new measures were successfully carried out, without serious difficulty, at the opening of the present academic year, the Deans of the several departments being given discretion to provide some relief for students in narrow circumstances who found themselves obliged to meet at the same time the deferred charges for the last half of the year 1903–04 and the advance charges for the first half of the year 1904–05. This is one of several administrative improvements which have resulted from the careful search for means of increasing legitimate revenue and doing away with unnecessary, though customary, expenditure.

In connection with the general efforts to reëstablish the proper relation between the receipts and the expenditures of Harvard College, the Scientific School, and the Graduate School taken together, the fees charged in the laboratory courses offered by the Faculty of Arts and Sciences were examined and compared anew; and a revised scale of fees was adopted in February, to take effect September 1, 1904. The new scale will increase somewhat the total amount of these fees, and will therefore place in the hands of the departments which maintain laboratory courses a somewhat larger sum of money to expend at their own discretion on equipment, repairs, and service in the several laboratories. A laboratory fee is a peculiarly just charge on the individual student; for it is the payment for specific facilities and services which he receives, but which a student who is not a member of that laboratory course does not receive. Laboratory fees charged to students amounted in 1903–04 to $33,535.19. This money is all expended for the benefit of the laboratories under the direction of the chairmen of the several departments and by their order.

One of the most encouraging events of the year 1903–04 in Harvard College was the progress made towards acceptance of the examinations conducted at many points scattered all over the United States by the College Entrance Examination Board in lieu of the examinations conducted exclusively by Harvard College with its own question-papers and its own readers. The College Entrance Examination Board has united a large number of colleges and universities in the conduct of admission examinations in both preliminary and advanced subjects, using question-papers prepared by carefully selected committees representing both colleges and secondary schools, the answer-papers being read by readers appointed by the Board from a large number of different colleges. It is obvious that the work of the Board tends strongly to common definitions of the subjects of examination and to common standards of examination on those subjects, and that these definitions and standards will in time regulate and simplify the preparatory work done in the secondary schools of the country. The Harvard Faculty of Arts and Sciences, having watched with interest the work of this Board from its beginning in 1900, came to the conclusion last spring that it was ready to accept membership in the Board, and to do its part in making its work increasingly successful and useful. Professor Briggs, Dean of the Faculty, Professor Hurlbut, Dean of Harvard College, and Professor Horatio S. White have represented the Harvard Faculty of Arts and Sciences before the Board, and Dean Briggs gives in his report (p. 90) a brief account of the present stage of this interesting development.

One proposition contained in the report of the Committee on Improving Instruction — the clause numbered 4 on page 94 — was never much discussed in the Faculty of Arts and Sciences, and has not been accepted or acted on in the subsequent discussions, — the proposition, namely, that all courses should be made as nearly as possible of equal weight. On the contrary, the Faculty now accepts the doctrine that courses in such a variety of subjects as the Faculty of Arts and Sciences deals with, necessarily conducted in different methods and with different objects in view, must and should differ in regard to the amount of work they call for from the student. The present efforts of the Faculty are directed to grading the different courses correctly: so that a course which calls for little work shall advance a student but little towards his degree, while a course that calls for much work shall count much towards the degree. To the recent proposals of the Faculty concerning improving the College instruction, stimulating scholarly ambition, and preventing shirks and malingerers from obtaining the A.B., the final form has not yet been given; but encouraging progress was made in the year 1903–04.

The large courses in Harvard College on the elements of English composition, history, government, economics, and philosophy, and the elementary course called Geology 4, have recently been the subject of much discussion. The last-mentioned course has been given up for the present as a course which may be counted towards the degree of A.B. The other large courses, including the first course in English, called English *A*, seem to be indispensable and highly serviceable. Nobody proposes that they should be abolished; but all agree that they might be made still more efficient than they are, by the expenditure of more money upon them in the employment of more assistants, at higher pay, for a larger number of hours per week. In these courses a considerable amount of lecturing by masters of the various subjects is indispensable; but careful work by young assistants, dealing with not more than 20 men at a time, and dealing with them often, is also indispensable, for reiterating the instructions of the Professor, securing an adequate amount of reading by each individual, and enforcing frequent, short tests written in the presence of the assistant. In all these large courses, satisfactory methods have been worked out and proved to be good;

so that the only remaining question is to find means of providing the numerous teachers required to carry out these sound methods. They are all costly. In every large elementary course a question is presented to every member of the class at least once a week which must be answered in writing in the presence of the assistant. The weekly conferences are a fundamental part of the work of the course; and the weekly marks have a large share in determining the student's mid-year and final record. A pass mark at examinations does not outweigh failure at all or most of the weekly conferences; and all students who fail frequently at the weekly conferences are warned. Fortunately these methods are useful to good students as well as to bad. In general, they strengthen that moral influence of teacher on student which is the essential element in any academic system.

English *A*, the largest of these courses, has been effectively conducted for many years. The largest of the Elective courses in 1903–04 was Economics 1, with 520 students. This fact simply means that nearly every student in Harvard College wishes to take this course at some time during his residence, a sensible desire which ought to be gratified in the most thorough possible manner. (Compare p. 94, paragraphs numbered 5, 6, 7 and 9.)

The Junior Class having manifested an interest in getting many of its members into the College Yard for the last year of their residence in Harvard College, and having expressed the opinion that certain improvements in the interior arrangements of Hollis and Stoughton Halls, including the introduction of more bath-rooms and of steam heat, would promote such a movement of members of their class to the Yard, the Corporation replied to a petition of the class that they had no money to spend on Hollis and Stoughton Halls, but would direct that the proposed changes be made, provided they should be furnished with money to meet the cost thereof, and that they were disposed to continue the experiment of giving preference to students in the Senior Class, or in the two upper classes, in the assignment of rooms in certain dormitories, and of allowing students to apply for rooms in groups of four or more persons. The money necessary to pay for the improvements and alterations was raised, and the changes were made during the summer vacation. Preference was given to students in the Senior Class of the year now current in Hollis, Stoughton, and Holworthy Halls. In consequence of these changes, the rents of rooms in Hollis and Stoughton Halls have been somewhat increased, and a charge for heating has also been imposed. The object which the petitioners had in view does not seem to have been accomplished as yet; but the duration of the experiment is too short to enable the Corporation to decide on the merits of the new policy.

The Dean of Harvard College and the Medical Visitor again report that an undue proportion of the undergraduates abandon their work for insignificant illnesses, or allege imaginary illnesses in excuse for absences. This is another case of the creation among inconsiderate students of a convention which justifies them in signing statements addressed to the College authorities which they know are not true. Young men do this without concern who would be indignant if told that they were liars or cheats. It is an ignoble and demoralizing practice; but its chief damage falls on the individuals who practise it. It is they who become flabby and untrustworthy as regards the discharge of duty. The remedies which the Medical Visitor suggests are, first, that no excuse be expected for an absence of less than five days' duration; and, secondly, that no excuse on the ground of illness be accepted for absence of five days or more except when accompanied by the attending physician's certificate. The Dean would prefer (p. 114) a method by which every undergraduate who wishes to be excused from duty because of sickness should report, or be reported, at once to the Office, and then be examined immediately by a competent physician authorized to decide on the validity of the proposed excuse. The Dean demonstrates (p. 113) that this evil abounds most in the luxurious dormitories, just as one would expect. In 1900, the Medical Visitor gave a similar demonstration. The Faculty has done nothing about this difficult subject. In the meantime, the "signing-off" process remains for the honest mass of the students in Cambridge a valuable protective method, since it enables the Medical Visitor to deal quickly with real cases of illness.

The Scientific School has now reached the limit of its effort to raise the standard of admission to the School, and has accomplished a valuable improvement without causing any serious reduction in the number of its students. The requirements for admission to the technical schools of the country have always been much lower than the requirements for admission to the colleges; and in most technical schools they still remain so, to the great injury of the schools of technology on the one hand, and of the high schools of the country on the other. For many years the Lawrence Scientific School was no exception to this rule; but it now requires as many "points" for admission as Harvard College requires — namely, twenty-six — and it endeavors in practice to live up to its requirements, as the following table demonstrates: —

1903.	Admitted.	Admitted "Clear."	Rejected.
June	41	2	40
September	34	..	18
Total	75	2	58
1904.			
June	40	6	36
September	37	2	30
Total	77	8	66

For admission as regular students there appeared in the summers of 1903 and 1904, 276 candidates, of whom 152 were admitted and 124 were rejected, — a large proportion of rejections. Of the 124 persons rejected, 60 were, however, admitted as Special Students, of whom 58 had passed in at least thirteen points. It is possible for the Special Student so admitted to attain the degree by good work done in the School itself, as it is in the Law School; but he is of course handicapped in the race from the start. Deducting these 60 that were admitted as Special Students, there remain 64 who were absolutely rejected, being nearly one-fourth of all the candidates. This percentage of rejection is much higher than it is in Harvard College (p. 102). The reason for this large percentage of rejection is mainly this — that candidates come to the admission examinations who have attended schools which are really incapable of preparing them to pass safely an examination of such scope and severity as the Scientific School now sets. The Faculty has the firm belief that the School will ultimately profit by this high standard, and that a school of high standard is the only one which the University should provide.

The Scientific School is in a peculiar position among the various departments of Harvard University. It is at once a school of general training and a school for professional training. In its first capacity it requires a fair knowledge of at least three languages and requires all its students to take elementary courses in a considerable variety of subjects. In its second capacity it undertakes to prepare engineers, chemists, architects, naturalists, foresters, etc., who will be capable of earning something in their respective occupations immediately on leaving the School. Because of this professional aim it has to be conducted on a group system, with complete liberty of election between groups but with little liberty of election among subjects. Its system is chiefly one of prescription, as is inevitable in a school which undertakes to give professional training. Moreover, it prescribes more courses a year for its students than Harvard College prescribes, so that the work of the students is strenuous and unremitting. It also insists that its students should make good use of a part of every summer vacation for field work in surveying, geology, and mining and metallurgy, and for shop-work.

Compared with that of the preceding year the registration in the Scientific School during the current year shows a loss of eighteen students; but this loss occurred in the group of General Science, the least valued of all the groups of study offered by the School, because it has no distinct professional object. The professional courses show an actual increase in the number of students for the present year. Many unfounded statements having appeared in the public prints during the last six months to the effect that the Lawrence Scientific School is not a place where hard study is enforced, the President desires to state explicitly that the School has always been, is now, and is intended to be, a place for steady work and the most strenuous endeavor on the part of both its teachers and its students.

The following table exhibits the occupations of the fathers of the students who entered Harvard College and the Lawrence Scientific School in the summer and autumn of 1904: —

		Harvard College.				Scientific School.			
	Occupation.	No.		%		No.		%	
	Business	866		43.1		329		62.1	
Professional	Physicians	112	512	5.6	25.5	18	70	3.4	13.3
	Lawyers	160		8.0		29		5.5	
	Ministers	73		3.6		10		1.9	
	Others	167		8.3		13		2.5	
	Government Officials	53		2.6		6		1.1	
	Farmers	53		2.6		16		3.0	
	Wage Earners	253		12.6		60		11.3	
	"No Occupation"	56		2.8		..		..	
	No Record	216		10.8		49		9.2	
	Total	2009		100.0		530		100.0	

Three-sevenths of the fathers of the College students are in some sort of business, large or small; and more than four-sevenths of the fathers of students in the Scientific School are in trade. Very few farmers send their sons to either the College or the Scientific School. As to wage earners, over eleven per cent. of the fathers of the students belong to this class both in the College and in the Scientific School. The occupations of these wage earners will be found in the Appendix (p. 347). The great majority of the undergraduates come from cities and towns. More than a quarter of the students in Harvard College have fathers who practise the professions; while only between one-eighth and one-seventh of the Scientific students have fathers in the professions. One student in seven has no father living; but deceased fathers are included in the above table.

The game of foot-ball has become seriously injurious to rational academic life in American schools and colleges, and it is time that the public, especially the educated public, should understand and take into earnest consideration the objections to this game.

Some of the lesser objections to the game are its extreme publicity, the large proportion of injuries among the players, the absorption of the undergraduate mind in the subject for two months, and the disproportionate exaltation of the foot-ball hero in the college world. The crude and vociferous criticism, blame, and praise which fall to the lot of the foot-ball player can be of no possible advantage to any young man at the opening of his active life; on the contrary, they keep before him an untrustworthy and unwholesome standard of public approval or disapproval. Some danger attends almost all of the manly sports, and taking their risks makes part of the interest in them; but the risks of foot-ball are exaggerated and unreasonable. In a well-managed college, where men physically unfit for foot-ball are prevented from playing the game, the risk of death on the foot-ball field within four years is not so great as the risk in riding horseback, driving an automobile, or boating and yachting, if these sports are followed for years. Nevertheless, many serious injuries occur which are apparently recovered from in good measure, but which are likely to prove a handicap to the victim in later life. Sprains, strains, concussions of the brain, and injuries to bones are apt to leave behind them permanent weaknesses, which in later life become troublesome. The distraction from proper collegiate pursuits of multitudes of undergraduates during the foot-ball season has become a familiar phenomenon; but it is, nevertheless, a mortifying one. The foot-ball hero is useful in a society of young men, if he illustrates generous strength and leads a clean life; but his merits of body and mind are not of the most promising sort for future service out in the world. The alert, nimble, wiry, tough body is, for professional or business purposes in future life, a better one than his; and the mental qualities of the big, brawny athlete are almost certain to be inferior to those of slighter, quicker-witted men whose moral ideals are at least as high as his. The state of mutual distrust and hostility between colleges which all too frequently foot-ball creates is another of these lesser evils. This distrust is publicly manifested in humiliating ways, as when a member of the opposing team, or an official of the game, puts his ear close to the mouth of the trainer who has run out from the side-lines to wash the face of a prostrate player. The precautions taken against trickery, like the armor and padding against hurts, show what the game has come to be. The carrying into elaborate and highly artificial practice the enfeebling theory that no team can do its best except in the presence of hosts of applauding friends is still another of the lesser evils of foot-ball. Worse preparation for the real struggles and contests of life can hardly be imagined. The orator, advocate, preacher, surgeon, engineer, banker, tradesman, craftsman, admiral, general, or statesman who cannot do his best except in the presence of a sympathetic crowd is distinctly a second-class man.

None of these things, however, enter into the main objection to the game, for the main objection lies against its moral quality.

As developed in this country under fierce intercollegiate competition, it has become a game in which the actions of the individual players can often be entirely concealed, not only from the mass of spectators on the benches, but from the nearer observers on the side-lines, and even from the umpire who gets as near as possible to the combatants. The game is played under established and recognized rules; but the uniform enforcement of these rules is impossible, and violations of the rules are in many respects highly profitable toward victory. Thus coaching from the side-lines, off-side play, holding, and disabling opponents by kneeing and kicking, and by heavy blows on the head and particularly about eyes, nose, and jaw, are unquestionably profitable toward victory; and no means have been found of preventing these violations of rules by both coaches and players. Some players, to be sure, are never guilty of them, and some are only guilty of them when they lose their tempers; but others are habitually guilty of them. The rules forbid unnecessary roughness in play, but there is wide latitude in the construction of unnecessary roughness. To strike a player with the clenched fist is unnecessary roughness; to give him a blow equally severe with the base of the open hand is not unnecessary roughness. Even in perfectly visible cases of violation of the rules the game officials often fail to punish the offenders; particularly if an offender on one side can be offset by an offender on the other, and both allowed to remain in the game.

The common justification offered for these hateful conditions is that foot-ball is a fight; and that its strategy and ethics are those of war. One may therefore resort in foot-ball to every ruse, strategem, and deceit which would be justifiable in actual fighting. New tricks are always desirable, as surprises. The weaker man is the legitimate prey of the stronger. One should always try to discover the weakest man in the opponent's line, as, for example, the man most recently injured, and attack him again and again. If a man, by repeated blows about the head and particularly on the jaw, has been visibly dazed, he is the man to attack at the next onset. If in the last encounter a player has been obviously lamed in leg or arm or shoulder, the brunt of an early attack should fall on him. As a corollary to this principle, it is justifiable for a player, who is in good order, to pretend that he is seriously hurt, in order that he may draw the opponent's attack to the wrong place. These rules of action are all justifiable, and even necessary, in the consummate savagery called war, in which the immediate object is to kill and disable as many of the enemy as possible. To surprise, ambuscade, and deceive the enemy, and invariably to overwhelm a smaller force by a greater one, are the expected methods of war. But there is no justification for such methods in a manly game or sport between friends. They are essentially ungenerous, and no sport is wholesome in which ungenerous and mean acts, which easily escape detection, contribute to victory, whether such acts be occasional and incidental, or habitual.

The general public that witnesses with delight these combats can seldom see or understand these concealed and subtle evils of the game. They witness with pleasurable excitement a combat which displays courage, fortitude, and a spirit of self-sacrificing coöperation in the players on each side. The college public is intensely interested in the qualities and the fate of the individual players, and is stirred profoundly by the sentiment of devotion to the institution, — because they believe that success in foot-ball is for the advantage of the institution. All parties welcome the chance to see a strenuous combat, — as their ancestors have for unnumbered generations. The respectable people who attend foot-ball games — collegians, graduates, and others — do not prefer to witness injuries, violations of rules, quarrels, and penalties. On the contrary, they always prefer to see skilful, vigorous playing, uninterrupted by such repulsive incidents. The responsible heads of secondary schools do not wish to have their pupils taught by college athletes that skill in breaking the rules without being detected is essential to success in playing foot-ball. The average college player had much rather play fair than foul. The players have not devised or enjoyed the stupid methods of training which impair the physical condition of most of them before the important games take place. What then are the sources of the grave evils in this sport? They are (1) the immoderate desire to win intercollegiate games; (2) the frequent collisions in masses which make foul play invisible; (3) the profit from violations of rules; (4) the misleading assimilation of the game to war as regards its strategy and its ethics.

On the question, whether or not foot-ball victories do, as a matter of fact, contribute to the growth and reputation of a college or university, there are evidently two opinions. But if a college or university is primarily a place for training men for honorable, generous, and efficient service to the community at large, there ought not to be more than one opinion on the question whether a game, played under the actual conditions of foot-ball, and with the barbarous ethics of warfare, can be a useful element in the training of young men for such high service. The essential thing for University youth to learn is the difference between practising generously a liberal art and driving a trade or winning a fight, no matter how. Civilization has been long in possession of much higher ethics than those of war, and experience has abundantly proved that the highest efficiency for service and the finest sort of courage in individual men may be accompanied by, and indeed spring from, unvarying generosity, gentleness, and good-will.

In 1903–04 the Graduate School suddenly and unexpectedly gained 102 students, but in the current year it has lost one-third of this gain. The gain and the loss are alike hard to understand. In the last three years the School has gained about 20% in number of students. An interesting fact recorded by the Dean (p. 132) relates to the number of courses taken by the 93 members of the Graduate School who obtained the degree of A.M. in 1904 on work done wholly in 1903–04, —46 were enrolled in 4 courses only; 21 in 4½; 22 in 5; 2 in 5½, and 2 in 6 courses. In other words, a little more than one-half of these serious students found it expedient to take more than four courses of study during the year. The Dean also points out (p. 136) that a majority of men who come to the Graduate School intend to remain in it but a single year, and that not one-half of them have a degree in view. In this respect the Graduate School differs greatly from the professional schools of Divinity, Law, and Medicine.

The custom of coming straight from one of the undergraduate departments into the Graduate School is not yet well established; although this practice would undoubtedly be for the interest of the young men who propose to devote themselves to teaching, letters, science, or journalism. The probable explanation of the phenomenon is that many of the young bachelors of arts or science who propose to devote themselves to these professions are compelled to earn money before they can continue their education.

The percentage of Graduate School students born in New England has diminished slightly during the past seven years. Since the percentage of students joining the School from Harvard College has increased, this fact merely means that through the College a larger number of men born out of New England are coming to the Graduate School.

Of the men who become candidates for the higher degrees of the Graduate School, the proportion of non-Harvard men has gradually increased from 44% in 1899 to 50½% in 1904.

Of the 47 men who received the degree of Ph.D. in June, 1904, 37 are already engaged each in the pursuit of a learned profession. The remaining 10 are students still, 8 in Europe and 2 in the United States. Of the 37, 26 are teachers in colleges and universities, and 4 are connected with secondary schools. The Harvard degree of Ph.D. leads with tolerable certainty to immediate employment in an appropriate calling.

The instructive diagram printed in the report of the Dean of the Divinity School (p. 168) shows the movement of attendance at this School during the last 50 years. The School being unique in all the world, past and present, and its vicissitudes having been many, this diagram is an interesting record of an unexampled experience.

The Chapel of Divinity Hall has been decorated with memorials of Professors Frederick H. Hedge and Joseph Henry Thayer, and of Rev. Edmund H. Sears and Ralph Waldo Emerson. To these will soon be added tablets in memory of Professor Henry Ware, Jr., and of Dean Charles Carroll Everett. The Chapel is a beautiful room, and these memorials give it a new interest and sanctity.

The Summer School of Theology was attended in 1904 by 47 persons, of whom 39 held academic degrees, and 5 others had been members of theological seminaries. This body of highly educated men pursued with enthusiasm the studies of the School, and at its close appointed a Committee to express to the President and Fellows and the Faculty of Divinity their high satisfaction with the instruction offered, and the intention of the members present at the meeting to exert themselves to enlarge the membership of the School. The letter received from the Committee is printed in the Appendix, page 341.

The Dexter Lectureship, which was established in 1811, under the will of Samuel Dexter, was originally called the Dexter Lectureship of Bible Criticism. Eight years later its subject was changed to Sacred Literature, and twenty-one years after, to Biblical Literature; and it was then, in 1840, united with the Hancock Professorship of Hebrew and Other Oriental Languages. This lectureship may properly deal, as its several titles have implied, with any part of the Bible. After the endowment of the Hancock Professorship was largely increased in 1891 by the bequest of Charles L. Hancock, the conjunction of the Dexter Lectureship with the Hancock Professorship became less desirable than it had been; because the income of the new Hancock gift, when not applied in full to the payment of the Hancock professor's salary, could be used by the President and Fellows for other purposes; whereas the income of the Dexter Lectureship had but one destination. Accordingly, in 1903–04, Professor Toy resigned the Dexter

Lectureship; and the Corporation thereupon connected the Dexter Lectureship with the Bussey Professorship of New Testament Criticism and Interpretation, held by Professor James Hardy Ropes. For nearly thirty years the Dexter Lectureship dealt with both Testaments; for sixty-four years it dealt with the Old Testament; and it is now likely to be devoted, for a time, to the New.

The Law School is in a condition of great prosperity, except that its building is far too small for the proper accommodation of its books and its students. This condition of things distinctly impairs the efficiency of the School. Already for ten years past the Reading Room has been too small for the number of students in the School. Elaborate plans have twice been prepared for an addition to Austin Hall, set sixty feet away from the present building and connected therewith by a bridge or covered corridor; but both of these plans, after much study and consultation, have been rejected. It is a grave problem for how large a school the new building should be planned. The number of Law students has been multiplied by more than five within thirty years; and the increase during the last half of that period has been more rapid than it was during the first half. Austin Hall does not admit of expansion with the growth of the School. Care must be taken that the new structure admit of extension in several directions, and for this purpose a piece of ground must be provided as a site larger than the immediate needs of the School require.

In June, 1904, Assistant Professor Westengard asked for another year's leave of absence, without salary, that he might continue to discharge his present important function as assistant to Professor Strobel, General Adviser to the King of Siam. As Professor Westengard's first term of service as assistant professor was expiring on the 1st of September, 1904, the Corporation renewed that appointment for another term of five years and then gave him leave of absence until the 1st of September, 1905. If Professor Westengard returns to the service of the Law School, he will undoubtedly be promoted to a professorship.

On and after the beginning of the year 1903–04 the maximum salary of a full professor in the Law School was raised from $5,500 to $6,500 a year, and salaries throughout the list were proportionately advanced. The pecuniary prosperity of the School, quite in contrast with the condition of the other departments of the University, made this action possible and just.

To how great an extent a good medical school is now a place for medical research may be inferred from the fact that much more than one-half of the report of the Dean of the Medical School (p. 184) relates to the investigations which were carried on in and by the School in 1903–04. At the close of the year, the last class was graduated to which candidates not holding a degree in Arts, Literature, Philosophy or Science could be admitted. That requirement for admission has reduced the number of students in the School more than was expected; but nevertheless some gain has been made, for the number of students in the School holding such degrees on October 1, 1904, was 49 more than it was when the new requirement went into effect. The probable minimum of students has now been reached, and henceforth the number may be expected to rise gradually.

When Mr. John D. Rockefeller agreed to contribute one million dollars to the undertaking of the Medical School, his pledge was accompanied by the condition that $765,000 should be secured elsewhere towards the same undertaking, and should be paid in before January 1st, 1904. Owing to the long studies made of the plans and specifications, and to the temporary embarrassment in the summer of 1903 of the contractor who had secured the job, the actual payment of a portion of the $765,000, which had been pledged in accordance with Mr. Rockefeller's condition, could not be secured by the 1st of January, 1904, because the construction of the building to which this portion was devoted, begun early in September, could not be sufficiently advanced by the 1st of January following. An application to Mr. Rockefeller for an extension of the date of the final payment on his pledge was answered by Mr. John D. Rockefeller, Jr., as follows: —

"... In view of your statement regarding the final payments of others, I will assume the responsibility, on behalf of my father, to extend the date of the final payment of his pledge until July 1st, 1904, judging from what you say that this will allow ample time for the collection of the remaining pledges."

This extension of time proved to be amply sufficient for the purpose, so that the final payments on Mr. Rockefeller's great gift and on the $765,000 on which his gift was conditioned, were all made before the date fixed by Mr. J. D. Rockefeller, Jr. The President and Fellows were thus generously relieved from a serious embarrassment into which they had fallen through unexpected delays in the beginning of actual construction.

A laboratory of Comparative Pathology was built during the year on Bussey land, not far from the quarters of the Horticultural Department, under the skilful direction of Professor Theobald Smith. It is to be used for pathological research and particularly for the work of the State Board of Health in supplying the Commonwealth with trustworthy material for vaccination purposes, — this new work of the Board of Health having been placed, like its earlier work in preparing diphtheria antitoxin, under the direction of Professor Smith. The building was erected with part of a fund belonging to the Bussey Institution, at a cost of about $20,000, and the Commonwealth pays for it a rent of $1000 a year. In the barns and paddocks adjoining are kept the horses and cows which furnish material for these two life-saving products of medical research.

The grounds of the Bussey Institution are well adapted for animal quarters, because ordinary dwellings do not closely approach the site of the buildings there devoted to pathological research. In connection with the new laboratory, there is urgent need of a modern stable for housing the larger domestic animals that are under observation for the study of infectious animal diseases. The new Medical School can offer no facilities of this kind, its site and its surroundings being wholly inappropriate for such structures.

The Dental School had a deficit in the year 1902–03 amounting to $2,124.80. When this fact came to the knowledge of the teachers in that School, thirty-nine of them (Treasurer's

Statement, p. 15) subscribed $2,883.50 in sums varying from $15 to $500, the same to be withdrawn from their salaries for the year. By this action they prevented a recurrence of the deficit, and procured for the School a surplus of $565.28 in 1903–04. In the meantime certain economies were effected in the management of the School which promise to keep the expenditures of the School within its receipts for the year now current.

Books continue to pour into the University libraries, both by gift and by purchase. The accessions of the year 1903–04 were greater than ever before, the total number of volumes added being about 35,000. The College Library and the Law School Library are both compelled to store thousands of volumes in other buildings, the manner of storage being inconvenient and not altogether safe as regards fire.

The long delay in the enlargement of Gore Hall, or the procuring of a new Library building, has the effect of developing the special reference libraries kept in other buildings. There are now 42,000 volumes scattered among twenty-nine such special libraries, which are kept in sixteen different buildings, of which only four are fireproof. In all probability these books are used to the highest advantage, although at a good deal of risk. They are, for the most part, books that could be replaced.

A passage in the report of the Librarian (p. 209) raises clearly this question — for how many persons should a university library be expected to provide the following facilities, — a working-room where writing materials, private papers, and the numerous books needed by the occupant can be continuously kept at hand on a large table with convenient shelves. It is obvious that no general reading-room can make any such provisions, and that no small or unenclosed space can answer such purposes, as, for example, a table placed in the stack near the class of books which the particular student affects. In a university which contains hundreds of professors and thousands of students, and receives every year numerous visitors for purposes of study and research, the question — what number of these private studies should be provided in connection with the university library — is obviously one of fundamental importance in planning the library building. The Law School provides just such facilities for its professors today, though not amply, and the scientific laboratories generally contain private rooms for the professors; but, in general, neither the professors nor the students of the University can dispense with studies of their own, where their main work must be done. Another problem which would greatly affect the plans of a new Library building is suggested in the demand of some departments of the Faculty of Arts and Sciences for small lecture-rooms within the Library building, where a considerable number of books could be conveniently brought together for the use of the professor or of the class during the lecture hour. Two or three such rooms might obviously be provided in any new Library building; but if twenty or thirty ought to be provided, each to be reserved for the use of a single department, the size and cost of the Library building would be appreciably increased.

The ordering of books for the College Library presents one curious difficulty. Every teacher who wants to have a book ordered by the Library is encouraged to hand in an order for that book. The Library Council assigns to thirty or forty teachers every year the privilege and duty of recommending for purchase books known or supposed to be desirable. On the whole, this seems an intelligent way of utilizing the knowledge of experts for the selection of the books to be bought by the central library. The difficulty is that forty per cent. of all the books thus suggested for purchase turn out to be already in the Library. The want of these books unnecessarily suggested for purchase cannot have been personally felt by the gentlemen who suggested them, because they have never inquired whether the books are in the Library or not. A great waste of labor for the Library staff is involved in looking up these thousands of titles of books proposed for purchase but already in the Library. This is an increasing evil; for the number of orders handed in has increased sixty per cent. within three years, and the proportion of orders which prove to be duplicates has increased even more. The result is that all orders are delayed in transmission, and the time of the Library staff, much needed in other directions, is wasted. The remedy is not easy to find, the suggestions of the gentlemen ordering books — namely, that such and such books ought to be in the Library — being in general judicious, and the Library staff being much more skilful than the professors in ascertaining whether a given book is in the Library. Nevertheless, the Librarian is fully justified in calling attention to this waste, which probably amounts to thousands of dollars a year.

The Chairman of the Division of Engineering demonstrates that the raising of the requirements for admission to the Scientific School, and the possibility of obtaining in five years both the A.B. and the S.B. have served to induce many students of engineering to spend three years in the College before entering the Scientific School. In consequence, the elections of engineering courses by College students increase in number, and the percentage of engineering graduates who had previously obtained the A.B. has increased within three years from eleven per cent. to thirty-six per cent. These are good tendencies; because they raise the general quality of the education of the engineer. They call, however, for more professors of engineering and a larger number of advanced courses. In the Lawrence Scientific School civil and electrical engineering are now better provided for than mechanical engineering. On the first opportunity the instruction in mechanical engineering should be strengthened.

The chairman of the Division calls attention to the good quality of the work done at the summer camp at Squam Lake, and to the fact that the summer work at this camp is intended almost wholly for Harvard students and counts for a degree; whereas the summer work at Cambridge and Boston has quite other objects, and, with a few exceptions, does not count for any academic degree. Last summer's experience at this camp tends to prove that students may work at indoor studies, like mathematics for example, for ten weeks out of the thirteen weeks of the long vacation and yet begin the fall term at the end of September in full vigor.

Seven of the teachers in the Division found time to publish researches in engineering subjects, and to do other important work outside of the regular routine instruction.

In the programme in mining and metallurgy in the Scientific School twenty-six courses are required for the degree of Bachelor of Science, twenty-three of them being taken in term time and the other three in parts of two summer vacations. The hours of required attendance at these courses are nearly evenly divided between lecture attendance and laboratory attendance, except that metallurgy calls for about two hundred more laboratory hours than mining does. Adding the time that must be spent in reading, solving problems, and preparing reports and theses, it is probable that the average working-time of the student does not fall below fifty-two hours a week for four years (p. 293). This is about the rate of work necessary for a student who undertakes to accomplish in three years the seventeen and a half courses required for the degree of Bachelor of Arts, on the improbable supposition that each College course will require nine hours of work a week. In spite of the high standard of work required in the department, twenty out of thirty-two men who have attained the degree of S.B. in mining and metallurgy during the past ten years have taken the degree with distinction — twelve *cum laude*, six *magna cum laude*, and two *summa cum laude*.

The chairman of the department sets forth very clearly (p. 294) the practical reasons which led the Faculty and the Governing Boards to institute the degrees of Mining Engineer and Metallurgical Engineer. These degrees will be given for a fifth year's work after the degree of S.B. has been received, it having been demonstrated that a mining and metallurgical engineer cannot get in four years a training which will enable him to meet modern demands, even though the vacations be freely used for field study. The chairman also reports that an experiment is to be tried by certain Harvard men who manage or control large mining and metallurgical enterprises, the plan of which is essentially as follows: A young graduate recommended by the Department of Mining and Metallurgy is to be taken as a technical apprentice by a mine, mill, or smelter for the period of a year, and is to be paid a living wage. The apprentice is to do any work to which he may be assigned, his tasks, however, in the course of a year being sufficiently varied to make the year's experience instructive to him. It is expected that this arrangement will be mutually profitable.

An interesting illustration of the new spirit of coöperation among American universities is the George Crocker Summer Mining School, the expenses of which are met in large part by Mr. George Crocker of San Francisco. The participating institutions were: Columbia University (5 instructors and 40 students), the Massachusetts Institute of Technology (3 instructors and 20 students), Harvard University (2 instructors and 12 students), and Yale University (2 instructors and 9 students). The Colorado School of Mines was also invited to participate, but sent no representative since all its students sufficiently advanced to be admitted to the Crocker School accepted remunerative employment for the summer, principally in the mines of Cripple Creek. The School of 1904 was organized and directed by Professor H. S. Munroe of the Columbia School of Mines, who arranged the course of study, leased and equipped the mines used for instruction, employed skilful miners to give instruction in practical mining operations, and arranged for occasional evening lectures by mining engineers. The subjects taught were drilling and blasting, timbering, mine-surveying, milling, sampling, and mine plant.

In former years the Harvard Department of Mining and Metallurgy has taught its students in summer about mining and metallurgical operations by visiting mines and ore-reduction plants, and making notes and sketches thereat. The additions which the George Crocker School provides are practical work by the students in drilling, blasting, and timbering under the guidance of experienced miners, mine-surveying, and making a test run of ore in a mill. The work in sampling was a repetition of part of the field work in the regular course at Harvard; and some parts of the work in milling could be done better in our own ore-dressing laboratory. Parts of the preliminary work in mine-surveying could also be given just as well at Cambridge. The Crocker School provided instructors whose number was large in proportion to the number of students, to the great advantage of the students.

The advantages of this coöperation between the teachers and students of different institutions were many; and the disadvantages were inconsiderable. Each school represented got a better knowledge of the methods of instruction in use in the other schools. The spirit of friendly rivalry stimulated students and instructors to do their best; and the opportunities to detect the weak as well as the strong points in the training of the students from the several schools should lead to improvements in instruction at all the schools. The object of the George Crocker School is, of course, to perfect the training of the American mining engineer, and thereby to elevate that important profession. In his useful enterprise Mr. Crocker has had the counsel of several of the best mining engineers in the United States.

Within recent years some new kinds of Special Students have appeared in the University under new regulations and practices of the several Faculties. The Law School, which requires for admission to its regular classes a previous degree from a college of high grade, or evidence that the graduate ranked in the first third of his class on the work of the Senior year, admits Special Students of three sorts: (1) Holders of academic degrees from colleges of a grade not acceptable; (2) graduates of Law schools which maintain a three years' course; and (3) persons who have never received a degree, but who pass satisfactory examinations in Blackstone, in the translation from standard Latin and French prose authors, and in rendering of passages of easy English prose into Latin and French, and are then admitted by special vote of the Faculty. A Special Student in the Law School may win the degree; provided he pass satisfactory examinations in the entire course of three years, and obtain a mark within 5% of that demanded for the honor degree. The result is that the list of Special Students in the Law School is highly respectable as regards both number and quality, nearly all of them already possessing some academic degree. The capable student who knows that he can spend only one or two years at the Law School is almost sure to enter as a Special Student, fearing lest, if he should enter as a regular student, he might be supposed to have failed in that career when he left the School without completing its course.

In a similar manner, Special Students in the Divinity School are usually men possessing academic degrees, but not intending or desiring to pursue the regular course of study in the School.

In the Scientific School a large proportion of the Special Students have passed at least one-half of the admission examination, as has already been described (p. 16).

The list of Special Students in Harvard College nowadays contains a considerable number of persons who have registered there temporarily, on their way to regular standing in some class in Harvard College at the end of a year of residence. They have been members of some other college at home or abroad, and not being able to pass an adequate number of examinations to determine to the satisfaction of the Committee on Admission from Other Colleges the precise category in which they belong in Harvard College, they enter as Special Students, and await the result of their first year at Harvard before asking for a determination of their places as regular students in Harvard. The same list of College Special Students contains a large number of persons who have passed a considerable portion of the admission examination and have been recommended by their former teachers as competent to go on with college work.

Every year there are numerous transfers of students, each way, between the College and the Scientific School, some of which involve transfer from the category of Special Student to that of regular student.

The increasing amount of summer work done in various departments of the University deserves attention. The summer school in Arts and Sciences brings together for six weeks a body of mature students, mostly teachers, to the number of from 800 to 900, — taking no account of such unusual incursions as that of the Cuban teachers in 1900, of the 400 extra teachers who joined the summer school in Cambridge in 1903 because they had come to Boston to attend the meeting of the National Educational Association, and of the 323 Porto Rican teachers in 1904. The instructors in this summer school always find the work interesting, and believe it to be highly useful; and eminent professors in the University are more and more content to take part in it.

The summer school at Squam Lake, originally started for students of engineering in the Lawrence Scientific School, has been eminently successful, and now accepts students of other subjects (p. 259). This school is kept open for eleven weeks in June, July, and August.

The summer courses in shop-work given in the Rindge Manual Training School begin about June 16th, and are completed in nine weeks.

Two courses in geological field work are given every summer, either of which may be counted as a half-course towards the A.B. or S.B. degree. The new George Crocker School of Mining and Metallurgy offered in the summer of 1904 a vigorous course of practical instruction to mining students well advanced in the subject. The Department of Geology and Geography, in addition to the two regular elementary summer courses in geology and physiography mentioned above, provided (p. 285) four summer courses in geology and physiography for the long vacation of 1904, one in New York State by Professor J. B. Woodworth, one in the Wahsatch Mountains by Professor Davis, one in the Black Hills and Big Horn Mountains of South Dakota by Professor Jaggar, and one in the Colorado Rocky Mountains by Mr. C. H. White. Students were enrolled in all these courses, and any of the courses could, by vote of the Faculty, be counted towards a degree. Several friends of the department gave scholarships for use in the Rocky Mountains courses, thus stimulating interest in this instruction, and making it possible for deserving students to attend the courses who otherwise would have been unable to do so. These scholarships were awarded to two graduates of Amherst and Cornell (Iowa) colleges respectively, now members of the Harvard Graduate School, to a Harvard graduate now teaching elsewhere, to a graduate of the Massachusetts Institute of Technology, and to a student of Yale University. Miss Maria Whitney has made permanent provision for aid to meritorious students in the study of field geology and geography, to be pursued preferably in the mountain regions of the Western United States, by giving a fund of $5,000, to be known as the Josiah Dwight Whitney Fund, the income of which is to be applied to this purpose.

Dr. William C. Farabee, Instructor in Anthropology, conducted, during the last summer vacation, a party of fifteen students on an interesting archaeological and ethnological excursion to the ruins in New Mexico and Arizona, and the homes of the Navajo, Zuñi, and Moki Indians. The party went together as far as the Pacific, whence its members returned at pleasure by different routes (p. 302).

Forty-seven persons attended the Summer School of Theology in 1904; and 135 persons attended the summer courses in medicine. The attendants at these courses are mostly persons already engaged in professional work.

This large body of summer instruction is new in the main within fifteen years, and much of it is new within five years. The resort to it gives evidence that alert students, and progressive persons who are already at work in professions, are ready and glad to work hard through a large part, at least, of the summer vacation, when offered competent instruction under advantageous conditions.

The University conducted during the summer of 1904 a school for public school teachers from the island of Porto Rico. The expedition was organized and managed by the Insular Department of Education under the general supervision of the Commissioner of Education for Porto Rico, Dr. Samuel McCune Lindsay, by whom it had been proposed to Harvard University in December, 1903. The proposition was heartily welcomed by the President and Fellows; but they did not see their way to assuming any financial responsibility for the proposed expedition, and the matter was therefore taken under advisement until it should be seen whether the necessary funds could be secured. Commissioner Lindsay at once set himself to the task of raising the money by public subscription; and with the coöperation of public-spirited citizens of Boston, New York, and Philadelphia, finance committees were organized in each of these cities. In the meantime the transportation of the expedition from Porto Rico to the United States and back, by United States Army transports, was authorized by

Congress. In May, 1904, the subscription fund had reached a point which led the Porto Rican Department of Education to make definite arrangements for the expedition. It was accordingly planned that a company of from three hundred to five hundred teachers should come to Cambridge for a six weeks' session, and that a smaller company should have a similar session at Ithaca, under the charge of Cornell University. The selection of teachers for these excursions was made by the Department of Education. Only those teachers were selected who had had some previous training in English, and were able to contribute one month's salary toward the cost of the expedition.

The expedition embarked at San Juan on Sunday, June 26, the party destined for Cambridge on the United States Army Transport Kilpatrick, and that destined for Ithaca on the Transport Sumner. The Cambridge party was made up as follows: —

	Men.	Women.	
Teachers	177	146	
Chaperones	0	6	
Interpreters	6	1	
Administrative staff	14	3	
Total	197	156	353

By the courtesy of the Boston Board of Health, the "Kilpatrick" was boarded on July 2 at the entrance of Boston Harbor by a reception committee having charge of the arrangements for baggage, transportation, and the assignment of lodgings. To facilitate these arrangements a number had been assigned to each person, and the members of the expedition had been divided into sections of about twenty-five, each with a leader. The members of each group were, so far as practicable, assigned to lodgings in neighboring houses, the men for the most part in one district to the south and east of the College grounds, and the women in another district to the north of the College grounds. The assignment to lodgings and the corresponding numbering of each piece of baggage were attended to on board ship; and without further delay or difficulty the party was conveyed to Cambridge in special electric cars, the cars being taken to points as near as possible to the destination of the several groups. The housing of the entire party having been practically completed before dark, the teachers were enabled to assemble at Randall Hall in season for supper. Arrangements had been made for providing three meals a day for all members of the expedition at the Summer School restaurant in Randall Hall during the whole of their stay in Cambridge, at a charge of three dollars a week for each person. Lodgings had been secured at varying prices, averaging $1.66 a week for each person. The services of the Medical Visitor of the University were made available for members of the expedition, at the expense of the expedition.

It was decided that the session should be devoted primarily to instruction in English. For this purpose the pupils were divided into three grades, elementary, intermediate, and advanced, based on their previous acquisitions in the English language. A provisional division into grades had been made by the Section Chiefs before the arrival in Cambridge; and these grades were subdivided into classes, ranging in number from sixteen to thirty-eight each, the men and the women being taught in separate classes. This arrangement produced two elementary and two intermediate classes, and one advanced class, of women; three elementary and three intermediate classes, and one advanced class, of men. The provisional assignment to grades and classes was corrected after the instructors had had an opportunity to form an estimate of the abilities of each pupil. After the first week it was decided to form a fourth elementary class for the men, for the benefit of twelve of the most backward pupils. The names of the English instructors will be found in the Appendix (p. 337). Twenty-nine members of the expedition were admitted to courses in the Summer School of Arts and Sciences.

A preliminary conference of the English instructors was held on the morning of July 4, in order that the methods and scope of their work might be discussed. Each instructor was left free to determine the method to be employed in his own work; and the selection of text-books was also left in his hands. A list of the text-books will be found in the Appendix (p. 338). At first the instruction in English was assigned to two prescribed morning periods of three-quarters of an hour each, and one voluntary afternoon period of an hour and a half. For the afternoon work the classes met in pairs, under the charge of one teacher. As the Porto Ricans exhibited a reluctance to engage in any serious work in the afternoon, the voluntary afternoon exercise was abandoned at the end of the first three weeks; and it was arranged that in its place each teacher should take his class on occasional short excursions, which would furnish an opportunity for conversation in English as well as for sight-seeing.

Though no one method was prescribed for the work in English, several features were common to the work of all the classes. After the first few days the classes were conducted almost wholly in English. In addition to the varying exercises in translation and grammar set by the different text-books, writing from dictation, conversation on familiar topics, reading of English prose with comments and explanations, committing passages of prose and poetry to memory, and daily or weekly compositions in English, formed part of the work of nearly every class. The written work was carefully corrected by the teachers and returned to the pupils, the corrected work being in many cases rewritten.

Any general characterization of the work in English is rendered difficult by the fact that the pupils exhibited wide differences in their previous acquisitions, their quickness in learning, and their diligence. The teachers found their classes interesting and responsive; and in every case there were a number of intelligent and zealous pupils who amply repaid every effort made for them. On the other hand there were persistent absentees and laggards in nearly every class. Of the pupils as a whole it may be said that the strangeness of the English tongue yielded perceptibly to their five weeks' life and study in an English-speaking community; so that they not only acquired more English but could make freer use of what they had. This overcoming of the strangeness of the tongue meant for the brightest and most zealous pupils the acquisition of a very considerable facility in conversation.

Nine courses of lectures were provided, the courses following each other in succession, and one lecture being given each morning. The subjects of the lectures and the names of the lecturers will be found in the Appendix (p. 337). Some of the lectures were given in Spanish and others in English; and of those given in English some were interpreted into Spanish, and some were given without an interpreter. In order to make the English lectures more easily understood, a syllabus of each lecture was printed. The syllabuses were usually printed in Spanish; but some were printed in English, and were used as exercises in English in preparation for the lectures. The lectures were poorly attended; and one course which had to be assigned to an afternoon hour on account of the shortening of the session from six to five weeks had to be abandoned, on account of the unanimity with which the Porto Ricans absented themselves.

Many of the afternoons during the session were devoted to excursions to places of interest in the vicinity of Cambridge, most of the excursions being to places which could be easily reached by pleasant electric car rides. A list of the excursions will be found in Appendix (p. 338). The expenses of the excursions were met in part by the Porto Ricans themselves, tickets being sold for each excursion at a price representing about one half the cost for each person. The remainder of the cost was met by the Expedition. Some of the most enjoyable and profitable excursions, however, as noted in the Appendix, were due to the generosity of private individuals.

On four Tuesday evenings during the session the Hemenway Gymnasium was placed at the disposal of the Porto Rican teachers for informal assemblies, which were much enjoyed. Phillips Brooks House was open to the women of the expedition daily for study and rest, and some of the chaperones were in constant attendance there.

The last regular exercises of the School were held on Saturday, August 6. On Monday evening, August 8, the Porto Rican teachers attended a public meeting held in Sanders Theatre under the auspices of the Harvard Teachers' Association, at which the President of the University gave an address on "Education for Efficiency." At the close of the meeting an informal reception for the members of the Summer School of Arts and Sciences and the members of the Porto Rican Expedition was held in Memorial Hall. The Porto Ricans from Cornell, having arrived in Boston on the same day, visited Cambridge in the afternoon, joined their friends at Randall Hall for dinner, and attended the address and reception in the evening, after which they returned on special cars to their transport at the Charlestown Navy Yard. On the following morning, August 9, the Harvard contingent left Cambridge in special cars and embarked at Charlestown at 10.30 A.M. No case of sickness was reported on the day of departure; and the teachers all landed at Porto Rico in health and safety.

After leaving Boston, both of the Porto Rican parties visited Philadelphia, Washington, and New York.

The report of the Director of the Botanic Garden (p. 241) shows that not even a scientific garden can be made safe from the ravages of the brown-tail moth and the gypsy moth, if its whole neighborhood is infested with these pests. For the extermination of injurious insects all the force of the entire community must be applied simultaneously, and with untiring energy; otherwise, any single-minded worm will prove itself too much for man. In spite of the most energetic defensive efforts, a good deal of damage was done during the past year; and the Director states that "at the present writing it is plain that the whole Garden is seriously imperiled."

Through the generosity of Mr. Nathaniel C. Nash, who originally fitted up the Botanical Lecture Room in the University Museum, electric lights, an electric lantern, and ventilation by electric motors have been introduced into that lecture room, to the great advantage of the teachers and students who use it. These facilities were entirely unattainable at the time the lecture room was originally fitted up. They illustrate strongly the new comforts and aids which electrical invention has within fifteen years placed at the service of all who can afford to pay for them.

The work of the Cuban Experiment Station of the Garden covers a considerable range of fruits and vegetables, including rice, maize, and sugar-cane. The stated publication of the monthly reports of the superintendent in charge would add to the usefulness of the station.

The Division of Chemistry can do no more than it now does, either in teaching or investigation, until it is provided with a more spacious and convenient laboratory. Both teaching and investigation are pursued with the utmost activity in Boylston Hall (p. 247), but that building, in spite of ingenious improvements and adaptations made by its successive Directors, can no longer properly accommodate the growing and intensely active department.

The Mineralogical Museum has had two pieces of good fortune. A friend of the Museum has enabled the Curator to install an excellent system of electric lamps for lighting abundantly both the wall cases and the flat cases on both floors of the Museum. This admirable artificial light adds greatly to the beauty and effectiveness of the exhibition rooms. From an entirely different direction a second piece of good fortune has befallen the Museum. The Director promptly seized an opportunity to buy at a very low price a large supply of mineral and rock material of good quality for the use of students, the stock of a dealer who was retiring from business. This purchase has secured an adequate supply of materials for the students' laboratories for many years to come.

The whole number of photographs now in the Fogg Art Museum is 36,930, of which 31,475 are catalogued and arranged in cases. The additions of the year to this collection numbered 5,981, but there is no room in the cases for these accessions. The accumulation of a large and valuable collection of photographs illustrating the fine arts was one of the original objects which the President and Fellows proposed to accomplish in this Museum. This object has already been in good measure attained.

A few valuable additions are made every year to the Gray Collection of Engravings, and the special library of the Museum is steadily enriched by purchases with the income of the Randall Fund and the Searle Fund.

It has been the policy of the Museum to lend slides and photographs to members of the University and to schools and publishers for use in lecturing or in illustrating books. Of late, requests for the use of slides have so increased in number as to embarrass the teaching work of the Museum itself. The Committee of the Museum have therefore voted that it is inexpedient to continue the lending of slides outside of the University save in exceptional cases at the discretion of the Director. Photographs will continue to be lent, because the collection of photographs is much larger than that of slides, so that loans from it can be made without interfering with the work of the Museum itself.

The Director points out that the most pressing need of the Museum is a properly lighted addition to the present building, for the display of original works of art which have come into the possession of the Museum. Plans for two wings have been prepared, one of which would cost about $50,000, and the other about $40,000.

At the opening of the Germanic Museum on the 10th of November, 1903, the University received an address from a Committee of twenty-five eminent German citizens — officers of the Imperial Government, artists, scholars, writers, and men of affairs — and a larger number of their countrymen from all parts of the Empire, presenting on behalf of the German people a magnificent collection of galvano-plastic reproductions of the best specimens of the German silversmith's art from the Middle Ages to the Eighteenth Century, together with an illustrated catalogue of these reproductions which set forth elaborately the sources, nature, and history of the original pieces. The thanks of the President and Fellows were returned as follows: —

"*Voted*, that the thanks of the President and Fellows be sent to the distinguished Committee whose generous initiative, aided by the example of their Sovereign and the coöperation of princely families, public museums, and private collectors, is about to enrich the Germanic Museum of this University with so splendid and informing a collection of monuments of Germanic craftsmanship.

"*Voted*, that in accepting with profound gratitude this unique gift as a token of the bond which unites all lovers of learning and the arts, however separated by land or sea, this Society of Scholars desires to pay its tribute of respect to the memory of the three great scholars who honored this undertaking by their earnest support, but whom death prevented from witnessing its completion — Rudolf Virchow, Ernst Dümmler, Theodor Mommsen."

In his report as Curator of the Germanic Museum Professor Francke gives an interesting account of the agencies through which the great gift of the German Emperor came about. He also describes the sources of the gift of fifty-five electrotype reproductions of German metal work just mentioned. This unique collection represents German handicraft in metal at its best, from the twelfth to the eighteenth century — in the earlier centuries a handicraft chiefly used in the service of the Church, but in the later in the service of cities, guilds, princes, and eminent families. The Curator says, very justly, that a building worthy of the collections already in our possession should provide for enlarging the scope of the Museum, so as to make it an historical survey of the development of Germanic civilization. He has in mind such an exposition as has been planned, and in large measure executed, in the Swiss National Museum at Zurich, under the direction of Dr. Heinrich Angst (LL.D., Harvard, 1903). In a university's long and comprehensive view, collections which exhibit the historical development of human crafts and arts are as important as natural history collections.

Mr. James H. Hyde, of New York (Harvard A.B. 1898), having generously offered to maintain for two years a resident fellowship in the Graduate School with the stipend of $600, to be known as the Fellowship of the Cercle Français de l'Université Harvard, and to coöperate with the Department of Public Instruction of the French Republic in the establishment for two years in the University of Paris of a fellowship to be held by an American student nominated each year by the President of Harvard University, the first Fellow of the Cercle Français at Harvard, Robert C. D. M. P. Dupouey, arrived in Cambridge at the beginning of the academic year under review, and was duly appointed to the new fellowship for one year from September 1st, 1903. A little later, Mr. George Wallace Umphrey, of the Graduate School, was nominated to the corresponding fellowship at the University of Paris. This exchange of scholars has again been effected for the current year. The experiment is interesting and promising.

On September 27th, 1904, the President and Fellows gave leave of absence on half pay to Professor Barrett Wendell for the year 1904–05 that he might accept an appointment as lecturer during that year at the University of Paris and other French universities. Mr. James H. Hyde conceived this plan also, and his generosity made its execution possible.

In the month of March the President and Fellows ordered that, beginning with the academic year 1904–05, a fee of four dollars a year should be charged to every student registered in any Cambridge department of the University for the maintenance of the Stillman Infirmary, and that on the order of a physician every student be given, in case of sickness, in return for this fee, a bed in a ward, board, and ordinary nursing for a period not exceeding two weeks in any one academic year. They also gave to students in departments outside of Cambridge the opportunity to secure the same privileges at the Infirmary as those given to Cambridge students by a voluntary payment of the fee of four dollars on or before a stated date (now October 10th in each academic year). They further determined that similar privileges should be given to unmarried officers of the University in case of sickness, provided they have paid the annual fee of four dollars. The Stillman Infirmary has funds amounting to about $61,000, the income of which is applicable to its maintenance. This income, together with the product of the general fee above provided, will probably meet the expenses of the institution for the present, even after the new ward for contagious diseases, now nearly finished, is brought into use. The Corporation in taking the action above described hoped, not only to provide an adequate income for the Infirmary, but also to cause sick students to make prompt resort to the Infirmary, where they can be taken care of in the best possible manner, instead of remaining in their rooms where it is difficult to take care of them well.

The experiment made at the Stadium on Class Day, 1904, showed that several thousand persons seated in the round end could hear an orator who spoke slowly and distinctly from a platform on the field, behind which a small sounding board had been erected. This experiment suggests that academic ceremonies for which large audiences assemble, such as those of Commencement morning, could be advantageously held there. Certain additional provisions would, however, be necessary, such as a stage capable of seating three or four hundred persons, and backed by a wall one hundred feet long and not less than forty feet high. An awning would also be necessary to keep the sun off the assemblage; and this awning would need to be strong enough to resist a fresh breeze. These provisions, if made in a handsome way, would necessarily be costly, and for the present they must be postponed. In the meantime, it is hoped that the public authorities will make the access to Soldier's Field from Harvard Square safer and pleasanter.

In order to straighten and improve the boundary between the Soldier's Field and the North Brighton Playground the President and Fellows and the City of Boston exchanged parcels of land of equal area and of supposed equal value. A road is to be built by the city along the new boundary, and it will then be time to complete the high, permanent fence which has already been built round the greater part of the Soldier's Field and the Longfellow Marsh. The complete enclosure of this invaluable tract will be of great advantage to the University.

In the fall of 1903 the Harvard Coöperative Society found itself both willing and able to purchase the building on Harvard Square called Lyceum Hall, and to enlarge considerably the field of its operations. For this purpose the Society borrowed from the University $50,000, secured by a mortgage on their new property. Delays in dealing with the actual tenants, and in making the needed changes and repairs in the building, prevented the Society from moving out of Dane Hall until the summer of 1904; but when the new year opened they were in full occupation of their new quarters. Heretofore the Society has occupied a portion of a University building within the College Yard, and has not been able to do business with the public at large. It has now placed itself on entire equality with all other shopkeepers on Harvard Square. Its entire property and stock are subject to taxation; and it can sell goods to any purchaser, whether connected with the University or not. Membership of the Society is still restricted to members of Harvard University and its kindred institutions. The Society continues to procure for all its members substantial advantages in buying the various goods habitually needed by students.

The Harvard Dining Association, which occupies Memorial Hall, desired to improve and add to its plant, and particularly to provide adequate means of ventilating both the basement and the dining hall; and for this purpose they asked permission to add considerably to the debt of the Association. The President and Fellows granted this permission, but regretted to find in the autumn that the Association had been led to spend, in making improvements, a much larger sum than the Corporation had expected. The Association is now carrying the largest debt which has ever burdened it in its history of thirty years.

In December, 1903, the Corporation voted to discontinue at the close of the academic year the payment of rent to Cambridge churches for pews devoted to the free use of students in the University. For a century and three-quarters the religious affiliation of Harvard College was exclusively with the First Parish in Cambridge, which represented the Established Congregational Church in Massachusetts. In 1814, when a separate College Chapel had been provided in University Hall, a Unitarian church was organized to occupy the Chapel, and provide the religious services then acceptable to a great majority of the College families and the students. Students whose parents did not wish them to go to these Unitarian services were required to attend some other church in Cambridge, the College paying for their seats; and with the growing diversities of religious opinion among the College officers and students this practice gradually attained somewhat large proportions. In 1881 the Unitarian church which had had the use of the College Chapel ceased to exist; and since that date the services in the College Chapel have been conducted by a group of preachers representing several denominations. Moreover, the attendance of the students at all religious services has now for eighteen years been completely voluntary. Under the new conditions the just motives which originally led the College to provide free seats for its students in a variety of churches ceased to have any application; so that the Corporation felt free to discontinue an honorable practice of long standing. The various Cambridge churches all continue to make welcome students in all departments of the University.

An interesting report of the year's work of the Secretary for Appointments will be found in the Appendix (p. 348). Apparently neither the young graduates of the University nor the older graduates who are already in places of authority and influence have found out how to use this comparatively new agency, which has now been copied by several other American universities. Nevertheless, a large amount of useful work has been done; and it is obvious that the work might easily be considerably extended, to the advantage of Harvard graduates, young and old, and also of schools and colleges, and business firms and corporations. Near the close of the Secretary's report is a list of the temporary employments which were procured for students during vacation and term-time. The kinds of occupation are numerous, but the three most important are those of the clerk, the tutor, and the canvasser.

The best ultimate disposition of class funds, when they cease to be needed by the classes to which they belong, is a problem of increasing and continuous interest. Few of the classes before 1850 had any funds. Of those that had, seven have already transferred their funds to the College for scholarship uses. The Class of 1851 has devoted its fund to the use of the Library. Four classes have placed their funds in the hands of the University, but still use the income for their own purposes. Recent classes have usually raised much larger funds than their predecessors in the first half of the century ever thought of doing, although the amounts of these recent funds vary widely in different classes. In January, 1904, the President and Fellows gratefully accepted from the Class of 1856 the gift of its class fund on terms named by Daniel A. Gleason, Class Secretary, Charles E. Vaughan, and David P. Kimball, Class Committee, in a letter dated January 21. The terms proposed by this class are well considered, and may be useful to other classes who have under discussion the ultimate disposal of their funds. The letter is therefore printed in the Appendix (p. 346).

In the President's report for the year 1902–03, dated January 11, 1904, it was pointed out that the financial result of that year was a deficit of $40,403.07 in the combined account of the College, Scientific School, Graduate School, and Library, and that, in that same year, an increase of $43,144.59 had taken place in the salaries paid in the departments under the Faculty of Arts and Sciences, in consequence of expectations cherished by the Corporation in the spring of 1902 which were not realized. The arrangements for the year 1903–04 were already made, and it was only possible to save a few thousand dollars on running expenses and to utilize new resources amounting to a few thousand dollars more. The result for the year was a deficit in the combined account of the departments under the Faculty of Arts and Sciences amounting to $30,743.06.

In the spring of the year 1904 the Corporation undertook to reduce the salary list in the departments under the Faculty of Arts and Sciences by at least $25,000; and by the opening of the current year the arrangements to that end had been made. In October last, however, it appeared that there was a loss of 118 students in these departments, involving a loss of tuition-fees to the approximate amount of $18,000. It also appeared that the students' rooms belonging to Harvard College had not been so well let for 1904–05 as they were for 1903–04, and that the loss involved was about $5,000. Some heavy expenditures had to be made during the summer of 1904 to prepare the site of Emerson Hall and to provide for heating and ventilating that building from the boilers in Sever Hall. In spite, therefore, of the reductions in the salary list and of an inexpedient frugality in other expenditures, this account must incur another deficit during the current year.

All the salary reductions have been made on the annual appointments, partly by diminishing the number of such appointments, and partly by reducing the compensation attached to some of them. The salaries of professors and other permanent officers have been maintained.

The worst evil connected with this condition of things has been the loss of certain valued instructors, who, being offered higher titles and higher pay at other institutions than Harvard College could afford to give them, much against their inclination, felt compelled to accept these higher offers. It is much to be deplored that Harvard University should be unable to retain the services of scholars who have demonstrated their capacity both for teaching and investigation; for the prestige of the University cannot be maintained if it is to be liable to such losses.

The situation of Harvard College in regard to its relative dependence on the interest on endowments on the one hand, and on students' fees on the other, has greatly changed within the last thirty years because of the fall in the rate of interest; and its dependence on students' fees is probably more considerable now than it ever was before. The following table, deduced from an account prepared by the Comptroller, Allen Danforth (Appendix, p. 345), demonstrates the increased dependence of the College on students' fees: —

	1831–32.	1871–72.	1903–04.
Receipts from Students	$22,645.60	$116,258.10	$599,280.92
Receipts from Investments	19,950.63	111,034.39*	373,450.76*
Total Receipts	$42,596.23	$227,292.49	$972,731.68
Percentage of Receipts from Investments (compared with Total Receipts)	46.8	48.9	38.4
Rate of Interest	. .	7.82	4.77

This increased dependence on fees is extremely undesirable, because it threatens the stability and just independence of Harvard College. The contrast between the earlier years and the last year would be greater, if it were not that the interest on all the Library funds and on the scholarship and fellowship funds are included in the table. These funds have mostly been created since 1871–72.

* Including the income on scholarship and fellowship funds.

The recurrence of the annual deficits which have occurred seven times within the last nine years to considerable amounts, could, of course, be provided against by raising the tuition-fee for Harvard College and the Lawrence Scientific School by some small amount like fifteen or twenty dollars; but this device would not provide for the real needs of the College. It is time that the salaries of the College, from bottom to top of the scale, should be moderately advanced to match the increasing cost of household comfort, of education for children, and of suitable recreations, and that the Corporation should be provided with the means of creating new places, on occasion, for young men of decided capacity who may be invited elsewhere. It would not be sufficient merely to maintain the staff of 1903–04. The power to enlarge that staff gradually and moderately is also necessary.

It is larger endowment that Harvard College needs; and for the present the right to raise the tuition-fee ought to be held in reserve. The Board of Overseers has lately expressed this opinion in two votes passed on December 14: —

> *First*, that it is the sense of this Board that salaries of professors and instructors should be maintained and that the customary and expected increases of salary be paid in every instance, irrespective of any other economies.
>
> *Second*, that it is the sense of this Board that it is not expedient at the present time to raise the tuition-fee of Harvard College.

The new endowment should be confined to the uses of Harvard College, and within the College to salaries and retiring allowances. On Commencement Day, 1870, the President said to the assembled alumni: —

> "This University, as it is to-day, is in the main the work of the generations who meet around these tables. The former centuries, to be sure, left us a fruitful germ, and, more than that, fructifying popular principles; but the professional schools are practically all the growth of this century. One-third of the College Yard has been bought since 1833. Stoughton, Holworthy, University, Dane, Grays, Boylston, the Library, the Chapel, and Thayer have all been built since 1804. In the last ten years five times as much money has been received by the College as was received in the first one hundred and seventy-five years of its life. How full of promise for our future is this single fact!

"But, gentlemen, there is enough still to be done by this and coming generations. We mean to build here securely and slowly a university in the largest sense. Now, as the plane of teaching rises it costs more, and it brings in less. A school will support itself; a college hardly; a university never. But we are sure that the experience of the recent past is to be continued and multiplied in the future; and we accept this last gift of the alumni (the Class Subscription Fund) as an earnest that the University may safely rely for its future on the liberality, devotion, and public spirit of its loving and grateful children."

These words are appropriate today, a generation later, the present crisis in the affairs of Harvard College being so serious as to rouse the solicitude of all its friends and lovers. The best form which the new endowment could take would be the permanent endowment of professorships, assistant professorships, instructorships, and assistantships. There are forty professorships in the Faculty of Arts and Sciences which have no endowment whatever; and with each professorship there should go at least one assistant professorship, one instructorship, and a number of assistantships varying with the nature of the professor's duties. To endow a full professorship now requires a fund of from $100,000 to $125,000; to endow an assistant professorship $50,000 would at present be sufficient; to endow an instructorship, $25,000; to endow an assistantship, $12,500. In addition to these special endowments, which might bear the name of a family or an individual, there should also be a fund — the result of numerous smaller gifts — which should be applicable to salaries and retiring allowances in the Faculty of Arts and Sciences. To accomplish the reasonable objects now plainly in view, the total sum of $2,500,000 is a moderate estimate. The oldest, the most essential, and the most beloved department of Harvard University now needs the prompt assistance of its alumni and friends.

The attention of the Overseers is respectfully invited to the following reports of the Deans of the Faculties and Schools and the Directors of the Scientific Establishments.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, January 10, 1905.

REPORTS OF DEPARTMENTS.

THE FACULTY OF ARTS AND SCIENCES.

To THE PRESIDENT OF THE UNIVERSITY:—

SIR, — I have the honor of presenting a report on the work of the Faculty of Arts and Sciences for the academic year 1903–04.

Besides the President, the Faculty contained sixty-six Professors, two Associate Professors, thirty-nine Assistant Professors, one Lecturer, twenty-six Instructors, and the Recorder, — in all one hundred and thirty-six members, five more than in the preceding year.

Instruction in 1903–04.

With the following list of courses of instruction that were actually given under the authority of the Faculty, I print a statement of the number and the classification of the students in each course. The figures are those officially returned to the Recorder by the several instructors at the close of the academic year, and take no account of persons who, regularly or irregularly, attended the exercises and did the work of a course without being officially recognized as members of it. The abbreviations are those ordinarily used in such lists:—

COURSES OF INSTRUCTION GIVEN IN 1903–04.

Semitic Languages and History.

For Undergraduates and Graduates: —

1. Professor LYON. — Hebrew (elementary course).
1 Ju., 2 So., 1 Sp., 4 Di. Total 8.

6 *hf*. Professor LYON. — Babylonian-Assyrian History. Contact of the Babylonians and Assyrians with the peoples of the Mediterranean coasts and islands. Diffusion of the Babylonian-Assyrian culture through the medium of the Phoenicians. 1 Gr., 2 Ju., 1 So., 1 Sp., 1 Di. Total 6.

12. Professor LYON. — History of Israel, political and social, to the capture of Jerusalem by the Romans.
13 Se., 9 Ju., 11 So., 1 Fr., 1 Sp., 5 Di. Total 40.

16. Professor G. F. MOORE. — History of pre-Christian Hebrew Literature.
2 Gr., 1 Se., 2 So., 3 Sp., 1 Di. Total 9.

13. Professor Toy. — History of the Hebrew Religion, with comparison of other Semitic religions. 2 Gr., 1 Ju., 1 So., 1 Sp., 3 Di. Total 8.

14 *hf.* Professor Toy. — History of the Spanish Califate. The Barbary States. Moslems in Sicily. The Korān. 1 Gr., 1 Ju., 2 Di. Total 4.

Primarily for Graduates: —

‡2. Professor Toy. — Hebrew (second course). Interpretation of parts of the Prophets and the Poetical Books. 1 Gr., 1 Ju., 2 Di., 1 R. Total 5.

3*b*. Dr. Haynes. — Classical Aramaic (second course). — Rödiger's Chrestomathia Syriaca. The Peshitto. 3 Di. Total 3.

‡4. Dr. Haynes. — Assyrian. 1 Ju., 1 Di. Total 2.

‡5. Professor Lyon. — Assyrian (second course). — The Laws of Hammurabi. 1 Gr., 1 So., 1 Di. Total 3.

‡7. Dr. Haynes. — Arabic. Brünnow's Chrestomathy. 1 Ju., 2 Di. Total 3.

‡8. Professor Toy. — Arabic (second course). The Moallakāt; Motenebbi; Ibn Ḫaldun; the Korān. 1 Gr., 1 So., 1 Di. Total 3.

‡20*c*. Professor G. F. Moore. — Old Testament: Principles and Practice of Criticism. 2 Di., 1 R. Total 3.

Indic Philology.

For Undergraduates and Graduates: —

1*a* ^{1}*hf.* Dr. Ryder. — Elementary Sanskrit. 1 Se., 1 Di. Total 2.

Primarily for Graduates: —

‡2 ^{1}*hf.* Dr. Ryder. — Sanskrit. — Gnomic Poetry. The Centuries of Bhartrihari, with the native Scholia. 1 Gr. Total 1.

‡3 ^{2}*hf.* Dr. Ryder. — Sanskrit. — Lyric Poetry. The Cloud-Messenger (Meghadūta) of Kālidāsa, with Mallinātha's commentary, the Samjīvanī. 1 Gr. Total 1.

‡9 ^{1}*hf.* Professor Lanman. — Sanskrit. Introduction to the language and literature of the Vedas. Hymns of the Atharva-Veda, with study of the ancillary Sanskrit works and of Whitney's Critical Commentary. 1 Gr., 1 Di. Total 2.

‡10 ^{2}*hf.* Professor Lanman. — Sanskrit. Continuation of the study of the Vedas. 1 Gr., 1 Di. Total 2.

‡11 ^{2}*hf.* Dr. Ryder. — Lectures on the Sanskrit Drama. 2 Gr., 11 Se., 11 Ju., 18 So., 9 Fr., 2 Sp. Total 53.

‡20. Professor Lanman. — Advanced special study of selected Sanskrit works, with practice in the use of the manuscripts of the Harvard collection. 1 Gr. Total 1.

Classical Philology.

Primarily for Undergraduates: —

GREEK.

G. Dr. Chase. — Course for Beginners. 4 So., 8 Fr., 1 Sp., 1 Di. Total 14.

A. Dr. Stickney. — Homer; Attic Prose. Composition. 1 So., 8 Fr., 4 Sp. Total 13.

B. Professor H. W. SMYTH, Asst. Professors GULICK and HARRIS. — Greek Literature. Plato; Lysias; Xenophon; Elegiac, Iambic, and Lyric Poets; Euripides. Lectures on the History of Greek Literature.
2 Ju., 7 So., 60 Fr., 2 Sp., 1 Di. Total 72.

E hf. Dr. CHASE. — Greek Prose Composition (first course).
2 Se., 3 Jr., 6 So., 17 Fr. Total 28.

1. Asst. Professor HARRIS and Dr. STICKNEY. — Greek Literature. The Period of Athenian Supremacy. Herodotus; Aeschylus; Plutarch; Thucydides; Aristophanes; Sophocles. 3 Ju., 9 So., 2 Sp. Total 14.

2. Asst. Professor CLIFFORD H. MOORE. — Greek Literature. Aristophanes; Thucydides; Aeschylus; Sophocles.
1 Se., 4 Ju., 19 So., 1 Sp. Total 25.

3 *hf*. Asst. Professor HARRIS. — Greek Prose Composition (second course).
5 Gr., 4 Ju., 9 So. Total 18.

LATIN.

A. Dr. W. W. BAKER. — Cicero; Virgil. Composition.
1 Ju., 5 So., 11 Fr., 4 Sp., 1 Sc. Total 22.

B. Professor HOWARD, Associate Professor C. P. PARKER, Asst. Professor CLIFFORD H. MOORE, and Dr. E. K. RAND. — Latin Literature. Livy; Horace; Terence. 1 Se., 5 Ju., 11 So., 117 Fr., 9 Sp. Total 143.

E hf. Dr. E. K. RAND. — Latin Composition (first course). Translation of English narrative. 1 Se., 1 Ju., 7 So., 18 Fr. Total 27.

1. Professor MINTON WARREN and Dr. E. K. RAND. — Latin Literature. Tacitus; Horace; Catullus. 3 Ju., 28 So., 1 Fr.. Total 32.

2. Associate Professor C. P. PARKER and Dr. E. K. RAND. — Latin Literature. General View of Latin Poetry. 1 Se., 2 Ju., 9 So., 1 Fr. Total 13.

3 *hf*. Professor HOWARD. — Latin Composition (second course).
7 Gr., 1 Se., 5 Ju., 9 So. Total 22.

For Undergraduates and Graduates: —

GREEK.

6. Professor H. W. SMYTH and Asst. Professor GULICK. — Greek Literature. Demosthenes; Aeschines; Aeschylus; Sophocles; Aristophanes.
1 Gr., 6 Se., 9 Ju., 2 So. Total 18.

7 *hf*. Professor J. H. WRIGHT. — Greek Prose Composition (third course).
5 Gr., 8 Se., 3 Ju. Total 16.

9. Professor ROPES. — Introduction to the Study of the New Testament.
1 Se., 4 Ju., 4 So., 1 Sp., 9 Di. Total 19.

8. Professors GOODWIN and J. H. WRIGHT. — Plato; Aristotle. Survey of Greek Philosophy from Thales to Aristotle. 5 Gr., 9 Se., 1 Ju. Total 15.

16. Asst. Professor HARRIS. — Greek Literature. The Homeric Poems, with studies of their influence to the time of the Renaissance.
1 Gr., 7 Se., 2 Ju., 2 So. Total 12.

13 ^{1}*hf*. Associate Professor C. P. Parker. — Greek Philosophy. Plato (Protagoras. Meno, Phaedo, Phaedrus). 1 Se. Total 1.

14 ^{2}*hf*. Asst. Professor Gulick. — Greek Literature. Lucian and his times. 1 Gr., 2 Se., 1 So. Total 4.

12. Professor H. W. Smyth. — History of Classical Greek Literature. 11 Gr., 1 Se. Total 12.

Latin.

6. Professor Howard. — Latin Literature. Suetonius; Pliny; Juvenal; Martial. 1 Gr., 5 Se., 15 Ju., 2 So. Total 23.

7 *hf*. Associate Professor C. P. Parker. — Latin Composition (third course). 7 Gr., 9 Se., 2 Ju. Total 18.

8. Professor Smith. — Latin Literature. Plautus; Cicero; Lucretius. 6 Gr., 9 Se., 2 Ju., 1 So. Total 18.

14 ^{1}*hf*. Asst. Professor Clifford H. Moore. — Latin Literature. — The Roman Historians to Tacitus. 6 Gr. Total 6.

9 ^{2}*hf*. Dr. W. W. Baker. — Latin Literature. Cicero and Quintilian. Selections from the De Oratore and the Institutio Oratoria. 2 Gr. Total 2.

10. Professor Morgan. — The Private Life of the Romans. 6 Gr., 23 Se., 32 Ju., 23 So., 1 Sp., 2 Sc., 1 Me. Total 88.

11. Professor Smith. — History of Latin Literature (Poetry). 7 Gr., 1 Se. Total 8.

Primarily for Graduates : —

Classical Philology.

25. Asst. Professor Clifford H. Moore. — Proseminary. Introduction to the methods of Criticism and Research, with special reference to the textual criticism and interpretation of Classical Authors. 11 Gr., 1 Se. Total 12.

‡76 ^{1}*hf*. Asst. Professor Harris. — Greek Epic Poetry other than the Iliad and Odyssey. 1 Gr., 1 Se. Total 2.

52 ^{2}*hf*. Dr. Stickney. — Greek Elegiac and Lyric Poetry. 1 Ju. Total 1.

‡43. Professor J. H. Wright. — Sophocles. The Plays and Fragments. 7 Gr., 2 Se., 2 R. Total 11.

71 ^{1}*hf*. Professor Edward Capps (University of Chicago). — Introduction to the study of Greek Comedy. 3 Gr. Total 3.

‡60. Professor Ropes. — The Gospels of Matthew, Mark, and Luke. 1 Gr., 3 Di. Total 4.

‡69. Professor Ropes. — The Apocalyptic Literature, with special study of the Revelation of John. 2 Gr., 2 Di. Total 4.

40 ^{1}*hf*. Professor Morgan. — Greek Literary Criticism. Aristotle (Art of Poetry). Longinus (on the Sublime). 3 Gr., 1 Se. Total 4.

47. Professor Minton Warren. — The Comedies of Terence. 7 Gr., 2 Se. Total 9.

50 ^{2}*hf*. Professor Morgan. — Roman Satire from Ennius to Juvenal. 4 Gr., 4 Se. Total 8.

65 ^{2}*hf*. Professor Howard. — The Tragedies of Seneca. 1 Gr. Total 1.

‡39 ^{2}*hf.* Associate Professor C. P. PARKER. — Cicero's Interpretation of Greek Philosophy. 1 Gr., 1 Se. Total 2.

34 ^{1}*hf.* Asst. Professor GULICK. — Greek Grammar (Sounds and Inflections). Study of Dialectic Inscriptions. 5 Gr. Total 5.

‡30 ^{2}*hf.* Asst. Professor GULICK. — Introduction to Greek Palaeography. 4 Gr. Total 4.

‡22 ^{2}*hf.* Professor MINTON WARREN. — Latin Grammar (Sounds and Inflections). 5 Gr. Total 5.

‡55 ^{1}*hf.* Professor MINTON WARREN. — Interpretation of Latin Inscriptions important for their Language or Content. 5 Gr. Total 5.

75 ^{2}*hf.* Professor MORGAN. — The Eleusinian and other Greek Mysteries. 3 Gr., 1 Instr. Total 4.

51 ^{1}*hf.* Professor HOWARD. — Roman Political Antiquities. 5 Gr. Total 5.

‡74 ^{1}*hf.* Professor EDWARD CAPPS (University of Chicago). — The Greek Theatre. 1 Gr., 2 Se. Total 3.

20. THE SEMINARY OF CLASSICAL PHILOLOGY.

Professors SMITH and H. W. SMYTH, Directors for 1903–04. — Training in philological criticism and research. Text-criticism and interpretation of Greek and Latin authors: for 1903–04, Early Greek Elegists and Juvenal. 6 Gr. Total 6.

Comparative Philology.

‡1 ^{1}*hf.* Professor HANNS OERTEL (Yale University). — General Introduction to Comparative Philology. 4 Gr., 1 Se. Total 5.

‡2. Professors VON JAGEMANN and GRANDGENT. — General Introduction to Linguistic Science. The Principles of Change in Language. Phonetics. The Pronunciation of English, French, German, and Latin. 10 Gr. Total 10.

English.

Primarily for Undergraduates: —

A. Asst. Professor HURLBUT, Mr. COPELAND, Drs. BROWN, HOYT, and TUPPER, and Messrs. RANKIN, NUTTER, NOYES, REYNOLDS, UTTER, RIDEOUT, and ARENSBERG. — Rhetoric and English Composition. 5 So., 427 Fr., 49 Sp., 118 Sc., 2 Bu., 1 Di. Total 602.

BC hf. Mr. T. HALL. — English Composition. 61 Sc. Total 61.

31. Professor WENDELL, Dr. MAYNADIER, and Messrs. NUTTER and W. R. CASTLE. — English Composition. 1 Gr., 7 Se., 13 Ju., 100 So., 25 Fr., 10 Sp., 6 Sc. Total 162.

22. Asst. Professor GARDINER, and Messrs. E. H. WELLS, ARCHIBALD, and HOLMES. — English Composition. 2 Gr., 10 Se., 13 Ju., 87 So., 22 Fr., 7 Sp., 3 Sc. Total 144.

86 ^{2}*hf.* Mr. COBB. — English Composition. (Discontinued in 1903–04 except for those students who were required to take a half-course in English Composition for the degree of A.B. in 1903–04, and who were unable to take English 22 or English 31.) 1 Se., 3 So. Total 4.

28 *hf.* Professors A. S. HILL, BRIGGS, KITTREDGE, and WENDELL, Mr. T. HALL, and Dr. BROWN. — English Literature. History and Development of English Literature in outline. 91 Fr., 8 Sp. Total 99.

18. Asst. Professor BAKER, and Messrs. CARLETON and R. L. LYMAN. — The Forms of Public Address.
18 Se., 39 Ju., 41 So., 1 Fr., 1 Sp., 2 Sc. Total 102.

30 $^{1\ \mathrm{or}\ 2}$*hf.* Asst. Professor BAKER, and Messrs. CARLETON and R. L. LYMAN. — Debating. 15 Se., 12 Ju., 2 So., 2 Sp., 1 Law. Total 32.

10 *hf.* Asst. Professor WINTER, and Messrs. HILLS and WILLARD. — Public Speaking. 28 Se., 47 Ju., 55 So., 2 Fr., 8 Sp., 2 Sc. Total 142.

For Undergraduates and Graduates: —

3a ^{1}*hf.* Asst. Professor SCHOFIELD. — Anglo-Saxon.
24 Gr., 7 Se., 3 Ju., 1 So. Total 35.

1. Dr. NEILSON. — English Literature. Chaucer.
33 Gr., 6 Se., 1 Ju., 1 Sp. Total 41.

35. Asst. Professor GARDINER. — English Literature. The English Bible.
6 Gr., 3 Se., 7 Ju., 6 So., 1 Fr., 3 Di. Total 26.

2. Professor KITTREDGE. — English Literature. Shakspere (six plays).
29 Gr., 20 Se., 32 Ju., 44 So., 1 Fr., 1 Sc. Total 127.

11a ^{1}*hf.* Asst. Professor F. N. ROBINSON— English Literature. Bacon.
3 Gr., 11 Se., 9 Ju., 10 So., 1 Fr., 1 Sp. Total 35.

11b ^{2}*hf.* Dr. NEILSON. — English Literature. Milton.
7 Gr., 7 Se., 21 Ju., 41 So., 8 Fr., 4 Sp., 1 Sc. Total 89.

42a ^{1}*hf.* Asst. Professor SCHOFIELD and Dr. TUPPER. — The Literary History of England from the Norman Conquest to Chaucer.
16 Gr., 6 Se., 10 Ju., 15 So., 1 Sp., 1 Sc. Total 49.

42b ^{2}*hf.* Asst. Professor SCHOFIELD and Dr. TUPPER. — The Literary History of England from Chaucer to Elizabeth.
10 Gr., 7 Se., 10 Ju., 15 So., 1 Fr., 1 Sc. Total 44.

32b ^{1}*hf.* Professor WENDELL and Mr. REYNOLDS. — English Literature. From the death of Spenser to the Closing of the Theatres (1599–1642).
8 Gr., 23 Se., 24 Ju., 24 So., 2 Fr., 4 Sp., 2 Sc. Total 87.

15 ^{2}*hf.* Professor WENDELL and Mr. E. H. WELLS. — English Literature. From the Closing of the Theatres to the death of Dryden (1642–1700).
23 Gr., 20 Se., 29 Ju., 40 So., 5 Fr., 2 Sp., 2 Sc. Total 121

8a ^{1}*hf.* Professor A. S. HILL and Mr. COBB. — English Literature. From the publication of the Lyrical Ballads to the death of Scott (1798–1832).
2 Gr., 15 Se., 18 Ju., 24 So., 1 Fr., 1 Sp. Total 61.

8b ^{2}*hf.* Asst. Professor FLETCHER and Mr. REYNOLDS. — English Literature. From the death of Scott to the death of Tennyson (1832–1892).
3 Gr., 24 Se., 65 Ju., 53 So., 7 Fr., 2 Sp. Total 154.

41. Dr. NEILSON, and Messrs. J. G. HART and STEARNS. — English Literature. History of English Literature from the Anglo-Saxon Period to the present time. 4 Gr., 16 Se., 20 Ju., 28 So., 4 Sp. Total 72.

37 ^{2}*hf*. Dr. MAYNADIER. — English Literature. The Story of King Arthur.
8 Gr., 8 Se., 10 Ju., 4 So., 7 Fr., 2 Sp., 4 Sc. Total 43.

29 *hf*. Professor A. S. HILL and Dr. MAYNADIER. — English Literature. The Novel from Pamela to Daniel Deronda. 7 Gr., 1 Se., 4 Ju., 1 So. Total 13.

45 *hf*. Messrs. COPELAND and ARENSBERG. — English Literature. Lives and Characters of Men of Letters, English and American.
5 Gr., 11 Se., 38 Ju., 35 So., 2 Fr., 2 Sc., 1 Di. Total 94.

12. Professor BRIGGS. — English Composition.
12 Gr., 7 Se., 21 Ju., 9 So., 1 Sp. Total 50.

Primarily for Graduates: —

16 *hf*. Professor BRIGGS. — History and Principles of English Versification.
7 Gr., 2 Se., 3 Ju., 5 So. Total 17.

3*b* ^{2}*hf*. Professor KITTREDGE and Asst. Professor F. N. ROBINSON. — Anglo-Saxon. Béowulf. 21 Gr., 2 Se., 1 Ju. Total 24.

25 ^{2}*hf*. Asst. Professor F. N. ROBINSON. — Anglo-Saxon. Cædmon. Cynewulf.
2 Gr. Total 2.

27 ^{1}*hf*. Professor KITTREDGE. — The English and Scottish Popular Ballads.
7 Gr. Total 7.

44 ^{2}*hf*. Professor KITTREDGE. — Chaucer. Study of special topics.
8 Gr. Total 8.

40 ^{1}*hf*. Dr. NEILSON. — Scottish Literature from Barbour to Lindesay.
6 Gr. Total 6.

14. Asst. Professor BAKER. — English Literature. The Drama from the Miracle Plays to the Closing of the Theatres.
21 Gr., 7 Se., 3 Ju., 1 Sp. Total 32.

5*b* ^{1}*hf*. Professor A. S. HILL and Dr. MAYNADIER. — English Composition and Literature. Studies in Modern English Prose.
8 Gr., 8 Se., 4 Ju., 1 So. Total 21.

COURSES OF RESEARCH.

20. The instructors in English held themselves ready to assist and advise competent Graduate Students who might propose plans of special study in the language or literature of the periods, or in the topics, mentioned below. Such plans, however, must in each case have met the approval of the Department.

I. PERIODS.

b. Professor KITTREDGE. — Middle English. 1 Gr. Total 1.

II. TOPICS.

g. Asst. Professor BAKER. — The English Drama: its history, and its relation to Continental Drama. 3 Gr., 1 Se. Total 4.

Germanic Languages and Literatures.

GERMAN.

Primarily for Undergraduates: —

A. Drs. BIERWIRTH and SKINNER, and Messrs. BOESCHE, STURTEVANT, REED, GROSSMANN, WEBER, and DANTON. — Elementary Course.
1 Gr., 7 Se., 13 Ju., 37 So., 225 Fr., 13 Sp., 18 Sc., 1 Law, 1 Di. Total 316.

D. Drs. Bierwirth and Kullmer, and Mr. Grossmann. — Elementary Course. 1 So., 1 Sp., 54 Sc. Total 56.

B. Mr. W. G. Howard. — Elementary Course (counting as two courses). 3 So., 21 Fr., 8 Sp., 1 Sc. Total 33.

C. Drs. Walz, Skinner and Kullmer. — German Prose and Poetry. 4 Ju., 8 So., 38 Fr., 2 Sp., 5 Sc. Total 57.

1*a*. Dr. Walz, and Messrs. Boesche, Reed, and Weber. — German Prose and Poetry. 1 Gr., 2 Ju., 50 So., 2 Fr., 4 Sp., 2 Sc. Total 61.

1*b*. Dr. Skinner and Mr. Grossmann. — German Prose. Subjects in History and Biography. 6 Ju., 32 So., 4 Fr., 3 Sp., 2 Sc. Total 47.

1*c*. Messrs. Reed and Sturtevant. — German Prose, narrative and descriptive. 1 Se., 5 Ju., 10 So., 3 Fr., 1 Sp., 28 Sc. Total 48.

Fhf. Dr. Kullmer. — Practice in speaking and writing German (first course). 1 Gr., 1 Se., 5 Ju., 9 So., 3 Fr., 1 Sp. Total 20.

Hhf. Mr. Grossmann. — Practice in speaking and writing German (second course). 2 Ju., 9 So., 1 Fr. Total 12.

2*a*. Dr. Skinner. — Introduction to German Literature of the Eighteenth and Nineteenth Centuries. Lessing, Goethe, and Schiller; German Ballads and Lyrics. 4 Se., 8 Ju., 10 So., 17 Fr. Total 39.

2*b*. Professor H. S. White, Mr. Boesche, and Dr. Kullmer. — Introduction to German Literature of the Eighteenth and Nineteenth Centuries. Lessing, Goethe, and Schiller; German Ballads and Lyrics. 5 Se., 18 Ju., 25 So., 30 Fr., 2 Sp., 3 Sc. Total 83.

3 Dr. Bierwirth. — Schiller and his Contemporaries. Lessing; Schiller; Goethe. 1 Se., 2 Ju., 6 So., 7 Fr., 1 Sp. Total 17.

4. Professor von Jagemann. — Goethe and his Time. 2 Gr., 1 Se., 5 Ju., 6 So., 8 Fr., 1 Sp. Total 23.

For Undergraduates and Graduates: —

G hf. Dr. Bierwirth. — German Grammar and practice in writing German (advanced course). 1 Se., 1 Ju. Total 2.

25 *hf.* Professor Francke and an assistant. — History of German Literature in Outline. 3 Se., 3 Ju., 18 So., 1 Sp. Total 25.

5. Professor Francke and an assistant. — German Literature of the Classic Period of the Eighteenth Century. 3 Gr., 8 Se., 5 Ju., 4 So., 1 Sp. Total 21.

26*a* ¹*hf.* Mr. W. G. Howard. — German Literature in the first half of the Nineteenth Century. Kleist; Uhland; Heine. 3 Gr., 1 Ju., 3 So. Total 7.

26*b* ²*hf.* Mr. W. G. Howard. — German Literature in the second half of the Nineteenth Century. The Development of the Novel and the Drama. 5 Gr., 2 Se., 1 Ju., 2 So., 1 Sp. Total 11.

28. Professor H. S. White. — Goethe's Italienische Reise. Readings and translation, with some examination of the original letters and diaries upon which the narrative is based, and with illustrations of the course of Goethe's travels and art studies. 1 Gr., 3 Se., 2 Ju., 4 So., 1 Sp. Total 11.

29. Professor H. S. White. — The Life and Writings of Richard Wagner; selections from the texts of Richard Wagner's musical dramas, including Der Fliegende Holländer, Tannhäuser, Lohengrin, Tristan und Isolde, Die Meistersinger, Der Ring des Nibelungen, and Parsifal, with some study of the legendary background, and with illustrations and elucidations from Wagner's other writings. 1 Gr., 4 Se., 8 Ju., 10 So., 2 Sp. Total 25.

8. Dr. Walz. — German Literature in the Twelfth and Thirteenth Centuries. Nibelungenlied; Kudrun; Hartmann; Wolfram; Walther von der Vogelweide. Translation into modern German.
4 Gr., 3 Se., 2 Ju. Total 9.

Primarily for Graduates: —

‡9a ^{1}*hf*. Professor Francke. — German Religious Sculpture from the Eleventh to the End of the Thirteenth Century, and its relation to homiletic and legendary literature, with interpretations in the Germanic Museum.
6 Gr., 2 Se., 3 R. Total 11.

‡10 ^{2}*hf*. Mr. W. G. Howard. — German Literature in the Sixteenth Century. Humanism and Reformation. Hutten, Luther, Hans Sachs, Fischart. Popular Literature in prose and verse. The Drama.
3 Gr., 1 Ju., 5 R. Total 9.

‡12a ^{1}*hf*. Professor von Jagemann. Gothic. Introduction to the study of Germanic Philology. General Introduction and Phonology.
16 Gr., 2 Se. Total 18.

‡12b ^{2}*hf*. Professor von Jagemann. — Introduction to the study of Germanic Philology (continued). Morphology, Etymology.
6 Gr., 1 Se., 1 Ju. Total 8.

‡14 ^{2}*hf*. Dr. Bierwirth. — Old Saxon. Introduction to Germanic Metrics.
2 Gr., 1 Se., 1 R. Total 4.

‡15 ^{1}*hf*. Dr. Bierwirth. — Old High German. 3 Gr., 1 R. Total 4.

‡22 *hf*. Professor von Jagemann. — History of the German Language. Syntax. Style. 4 Gr. Total 4.

SEMINARY COURSES IN GERMANIC LANGUAGES AND LITERATURES.

Primarily for Graduates: —

‡20c. Professor Francke. — Topics in the German Romantic Movement.
4 Gr., 2 R. Total 6.

‡20d. Dr. Walz. — The Storm and Stress Period. 5 Gr. Total 5.

SCANDINAVIAN LITERATURE.

Primarily for Graduates: —

2. Asst. Professor Schofield. — Icelandic (Old Norse). Selections from the Sagas and the Elder Edda. 6 Gr., 1 Sp. Total 7.

Romance Languages and Literatures.

FRENCH.

Primarily for Undergraduates: —

A. Dr. Morley, and Messrs. Adams, Morrison, Myrick, and F. W. Snow. Elementary Course.
4 Gr., 7 Se., 5 Ju., 13 So., 68 Fr., 22 Sp., 36 Sc., 1 Law. Total 156.

1*c*. Dr. Morley and Mr. Myrick. — Reading, translation, grammar, and composition. 8 So., 8 Fr., 1 Sp., 36 Sc., 1 Bu. Total 54.

1*b*. Asst. Professor Babbitt, Dr. M. A. Potter, and Mr. Michell. — French Prose, historical and general. Translation from French into English. 2 Ju., 26 So., 39 Fr., 8 Sp., 9 Sc. Total 84.

1*a*. Associate Professor de Sumichrast and Mr. Morrison. — Reading, translation, grammar, and composition. 6 Ju., 21 So., 25 Fr., 3 Sp., 4 Sc. Total 59.

2*c*. Asst. Professor Marcou, Drs. M. A. Potter and Morley, and Messrs. Whittem and F. W. Snow. — French Prose and Poetry. Corneille; Racine; Molière; Beaumarchais; Lamartine; Victor Hugo; Alfred de Musset; Balzac. Composition. 3 Se., 18 Ju., 51 So., 90 Fr., 5 Sp., 8 Sc. Total 175.

2*a*. Asst. Professors C. H. C. Wright and Babbitt, Messrs. Brun and F. W. Snow. — French Prose and Poetry. Corneille; Racine; Molière; Victor Hugo; George Sand; Alfred de Musset; Sainte-Beuve. Composition. 2 Se., 8 Ju., 35 So., 72 Fr. Total 117.

3 *hf*. Messrs. Brun and Dumas. — Practice in speaking and writing French (elementary course). 2 Se., 7 Ju., 27 So., 6 Fr., 3 Sp., 1 Sc. Total 46.

4 *hf*. Mr. Brun. — Practice in speaking and writing French (intermediate course). 1 Gr., 3 Se., 14 Ju., 18 So., 3 Fr., 1 Sp., 1 Sc. Total 41.

5 *hf*. Mr. Brun. — Practice in speaking and writing French (advanced course). 1 Gr., 4 Se., 4 Ju., 6 So., 2 Fr. Total 17.

For Undergraduates and Graduates: —

6*c*. Professor Grandgent. — General view of French Literature. 5 Gr., 6 Se., 7 Ju., 18 So., 2 Fr. Total 38.

6. Associate Professor de Sumichrast and Mr. Brun. — General view of French Literature. 3 Gr., 4 Se., 9 Ju., 26 So., 1 Fr., 1 Sp. Total 44.

13. Asst. Professor C. H. C. Wright. — The rise and growth of Classicism in French Literature. 3 Gr., 1 Se., 2 Ju. Total 6.

14. Asst. Professor Marcou. — French Lyric Poetry from Villon and the Fifteenth Century to the present time. 1 Gr., 3 Se., 1 Ju. Total 5.

18. Associate Professor de Sumichrast and Mr. F. W. Snow. — French Life in the Seventeenth and Eighteenth Centuries, described and illustrated by the literature and works of art. 16 Se., 31 Ju., 55 So., 11 Fr., 6 Sp., 14 Sc. Total 133.

8*a* [1]*hf*. Associate Professor de Sumichrast. — French Literature in the First Half of the Eighteenth Century. 5 Gr., 6 Se., 7 Ju., 3 So. Total 21.

8*b* [2]*hf*. Associate Professor de Sumichrast. — French Literature in the Second Half of the Eighteenth Century. 5 Gr., 7 Se., 13 Ju., 4 So. Total 29.

9. Asst. Professor C. H. C. Wright. — French Literature in the Seventeenth Century. 2 Gr., 2 Se., 1 Ju., 2 So. Total 7.

Primarily for Graduates: —

19 *hf*. Asst. Professor Marcou. — Historical French Syntax. 6 Gr. Total 6.

12. Professor Sheldon. — Old French Literature. The national Epic Poetry (the Chansons de geste). 5 Gr. Total 5.

ITALIAN.

Primarily for Undergraduates: —

1. Asst. Professor FORD, assisted by Mr. CAPOTOSTO. — Elementary Course. 2 Gr., 7 Se., 7 Ju., 18 So., 9 Fr., 4 Sp., 1 Sc. Total 48.

For Undergraduates and Graduates: —

5. Mr. MICHELL. — Modern Italian Literature. Prose and Poetry of the Eighteenth and Nineteenth Centuries. 1 Gr., 1 Se., 2 So. Total 4.

2. Asst. Professor FORD. — Italian Literature of the Fifteenth and Sixteenth Centuries. Torquato Tasso, Ariosto, Machiavelli, Benvenuto Cellini. 4 Gr., 1 Se., 3 Ju., 2 So. Total 10.

10. Professor GRANDGENT. — The Works of Dante, particularly the Vita Nuova and the Divine Comedy. 6 Gr., 1 Se., 1 Ju., 1 Instr. Total 9.

Primarily for Graduates: —

3. Professor GRANDGENT and Mr. F. W. SNOW. — Italian Literature of the Thirteenth and Fourteenth Centuries. Selections from Boccaccio, Petrarca, and Dante. Early Italian. Monaci's Crestomazia italiana dei primi secoli. 6 Gr., 1 Se. Total 7.

SPANISH.

Primarily for Undergraduates: —

1. Drs. M. A. POTTER and MORLEY, and Messrs. ADAMS, MORRISON, and WHITTEM. — Elementary Course. 7 Se., 25 Ju., 39 So., 25 Fr., 2 Sp., 7 Sc., 1 Law. Total 106.

For Undergraduates and Graduates: —

4 *hf.* Asst. Professors MARCOU and FORD. — A general view of Spanish Literature. 13 Gr., 2 Se., 1 Ju., 2 So. Total 18.

5. Asst. Professor FORD. — Spanish Prose and Poetry of the Nineteenth Century. Composition. 2 Gr., 1 Se., 6 Ju., 11 So. Total 20.

ROMANCE PHILOLOGY.

Primarily for Graduates: —

8. Professor SHELDON. — Old French. Phonology and inflections. The oldest texts. La Chanson de Roland; Chrétien de Troyes; Aucassin et Nicolette. 15 Gr. Total 15.

Comparative Literature.

For Undergraduates and Graduates: —

2. Professor SHELDON. — Mediaeval Literature in the vulgar tongues, with especial reference to the influence of France and Provence. 3 Gr. Total 3.

3. Asst. Professor FLETCHER. — Tendencies of European Literature during the Renaissance. 4 Gr. Total 4.

7. Asst. Professor FLETCHER and Dr. E. K. RAND. — The History of Pastoral Literature. The Classical Pastoral, and the Latin Pastoral of the Middle Ages and the Renaissance. The Pastoral in Modern European Literature. 4 Gr., 1 So. Total 5.

8. Dr. M. A. Potter. — Epic Poetry. General Characteristics. The Heroic Ballad, the National Epic, the Literary Epic. Types of the Popular Epic. 3 Gr. Total 3.

15. Asst. Professor Babbitt. — Rousseau and his Influence. 1 Gr. Total 1.

Primarily for Graduates: —

11 ^{1}*hf.* Asst. Professor Fletcher. — The Literary Relations of England and the Continent in the Sixteenth Century. 3 Gr. Total 3.

Celtic.

Primarily for Graduates: —

1 ^{1}*hf.* Asst. Professor F. N. Robinson. — Old Irish. General introduction to Celtic Philology. 1 Gr. Total 1.

3 *hf.* Asst. Professor F. N. Robinson. — Old and Middle Welsh. The Mabinogion and other selections from the Red Book of Hergest. Lectures on Early Welsh Literature. 1 Gr. Total 1.

Slavic Languages.

For Undergraduates and Graduates: —

1*a*. Asst. Professor Wiener. — Russian. 2 So., 1 Fr. Total 3.

1*b*. Asst. Professor Wiener. — Russian. Literature of the Nineteenth Century. Pushkin, Gogol, Turgenev, Tolstoy. Composition. 1 Gr., 1 Se. Total 2.

2*a* ^{2}*hf.* Asst. Professor Wiener. — Polish. 1 Gr., 2 Se., 1 Fr. Total 4.

4 *hf.* Asst. Professor Wiener. — Introduction to the History of Russian Literature. 3 Se., 21 Ju., 26 So., 6 Fr., 3 Sc. Total 59.

History and Political Science.

HISTORY.

Primarily for Undergraduates: —

1*b*. Asst. Professor Coolidge, and Messrs. Newell, Bingham, Fryer, and Shipman. — Modern European History (introductory course). 38 So., 272 Fr., 29 Sp., 7 Sc. Total 346.

For Undergraduates and Graduates: —

2. Professor J. H. Wright and Mr. Brackett. — History of Greece to the Roman Conquest. 5 Gr., 2 Se., 1 Ju., 8 So. Total 16.

4. Professor Haskins. — History of Mediaeval Institutions. 5 Gr. Total 5.

6. Professor Emerton. — General Church History to the End of the Seventeenth Century. 3 Gr., 1 Se., 2 Sp., 6 Di. Total 12.

5*a* ^{1}*hf.* Professor Emerton. — The Formation of the Catholic Church. 2 Gr., 5 Se., 4 Ju., 2 So., 4 Di. Total 17.

5*b* ^{2}*hf.* Professor Emerton. — The Roman Papacy and the Holy Roman Empire in the Middle Ages. 4 Gr., 8 Se., 8 Ju., 15 So., 1 Sp., 1 Sc., 2 Di. Total 39.

8. Professor Gross. — History of France to the Reign of Francis I. 1 Gr., 3 Se., 2 Ju., 1 So., 1 Fr., 1 Sc. Total 9.

9. Professor Gross. — Constitutional History of England to the Sixteenth Century. 17 Gr., 10 Se., 24 Ju., 12 So., 1 Fr., 1 Sp., 1 Di. Total 66.

11. Dr. MERRIMAN.—History of England during the Tudor and Stuart Periods.
8 Gr., 7 Se., 13 Ju., 5 So., 1 Sp., 1 Di. Total 35.

12a ¹*hf*. Professor MACVANE and Mr. BURLEY. — English History from the Revolution of 1688 to the Reform of Parliament.
7 Gr., 17 Se., 18 Ju., 17 So., 3 Fr., 2 Sp., 2 Sc. Total 66.

12b ²*hf*. Professor MACVANE and Mr. BURLEY. — English History since the Reform of Parliament.
5 Gr., 21 Se., 21 Ju., 33 So., 5 Fr., 2 Sp. Total 87.

16a ¹*hf*. Professor MACVANE, and Messrs. H. H. MORSE and WELLINGTON. — History of Continental Europe from the Peace of Utrecht to the Fall of Napoleon I. 10 Gr., 32 Se., 46 Ju., 87 So., 10 Fr., 3 Sp., 5 Sc. Total 193.

16b ²*hf*. Professor MACVANE, and Messrs. H. H. MORSE and WELLINGTON. — History of Continental Europe since the Fall of Napoleon I.
10 Gr., 23 Se., 33 Ju., 80 So., 11 Fr., 4 Sp., 6 Sc. Total 167.

27 ²*hf*. Dr. MERRIMAN. — History of Germany from the beginning of the Reformation to the close of the Thirty Years' War.
3 Gr., 11 Se., 14 Ju., 32 So., 13 Fr., 4 Sp., 4 Sc. Total 81.

29 ¹*hf*. Dr. MERRIMAN. — Spanish History to the Death of Philip II.
10 Se., 4 Ju., 22 So., 7 Fr., 1 Sp., 2 Sc. Total 46

19. Asst. Professor COOLIDGE. — The Eastern Question.
2 Gr., 2 Se., 5 Ju., 2 So. Total 11.

10b ²*hf*. Professor F. J. TURNER (University of Wisconsin). —American History. The Development of the West.
10 Gr., 31 Se., 58 Ju., 33 So., 1 Fr., 3 Sp., 1 Sc. Total 137.

13. Professor A. B. HART, assisted by Mr. SHEPARD. — Constitutional and Political History of the United States (1783–1865).
11 Gr., 31 Se., 76 Ju., 66 So., 1 Fr., 3 Sp., 2 Sc., 1 Di. Total 191.

14. Professor A. B. HART. — History of American Diplomacy. Treaties; application of International Law; foreign policy.
11 Gr., 7 Se., 3 Ju., 1 Sp., 1 Di. Total 23.

Primarily for Graduates: —

‡21. Professor HASKINS. — Introduction to the Sources of Mediaeval History.
3 Gr. Total 3.

‡24 ²*hf*. Professor E. C. MOORE. — The Church since the Reformation.
2 Se., 1 So., 1 R., 5 Di. Total 9.

23 ²*hf*. Professor F. J. TURNER (University of Wisconsin). — Selected Topics in the historical development of American Institutions. The Period of Monroe's Presidency. 8 Gr., 3 Ju., 1 So. Total 12.

COURSES OF RESEARCH.

20e. Professor A. B. HART and Professor F. J. TURNER (University of Wisconsin). — American History and Institutions. 14 Gr. Total 14.

20f. Dr. MERRIMAN. — English Institutions in the Tudor and Stuart Periods.
1 Gr., 2 Se. Total 3.

20g. Asst. Professor COOLIDGE and Dr. MERRIMAN. — History of Europe (1519–1525). 1 Gr., 2 Se. Total 3.

GOVERNMENT.

Primarily for Undergraduates: —

1. Professor LOWELL, assisted by Messrs. GEORGE, L. K. CLARK, G. H. ROBERTS, and T. H. REED. — Constitutional Government (elementary course). 1 Ju., 141 So., 200 Fr., 25 Sp., 9 Sc. Total 376.

For Undergraduates and Graduates: —

4. Professor MACVANE and Mr. JONES. — Elements of International Law. 9 Gr., 18 Se., 20 Ju., 7 So., 1 Sp. Total 55.

5. Professor HASKINS. — The Roman Law: its History, Principles, and Influence on European Institutions. 2 Gr., 11 Se., 10 Ju., 3 So., 2 Sp. Total 28.

16a ¹hf. Mr. C. S. HAMLIN, and Messrs. BEAMAN and BLAIKIE. — Administration of the Government of the United States. 8 Gr., 38 Se., 85 Ju., 91 So., 1 Fr., 4 Sp., 14 Sc. Total 241.

16b ¹hf. Mr. F. J. STIMSON, and Mr. BARR. — Tendencies of American Legislation. 6 Gr., 28 Se., 50 Ju., 36 So., 3 Fr., 4 Sp., 8 Sc., 1 Di. Total 136.

9 hf. Professor GROSS. — Origin and Development of Municipal Government in the Middle Ages. 1 Gr., 4 Se., 1 Ju. Total 6.

Economics.

Primarily for Undergraduates: —

1. Professor TAUSSIG, Asst. Professor ANDREW, and five assistants. — Outlines of Economics. 1 Gr., 15 Se., 108 Ju., 279 So., 72 Fr., 24 Sp., 29 Sc., 1 Di. Total 529.

For Undergraduates and Graduates: —

2. Professors TAUSSIG and CARVER. — Economic Theory. 9 Gr., 4 Se., 7 Ju., 1 So., 2 Sp. Total 23.

3. Professor CARVER. — Principles of Sociology. Theories of Social Progress. 8 Gr., 19 Se., 20 Ju., 3 So., 5 Sp., 5 Di., 1 Me. Total 61.

11. Asst. Professor GAY. — The Modern Economic History of Europe. 10 Gr., 2 Se., 2 Ju., 4 So. Total 18.

6. Dr. SPRAGUE. — The Economic History of the United States. 14 Gr., 18 Se., 18 Ju., 4 So., 3 Sp., 1 Sc. Total 58.

9a ¹hf. Professor RIPLEY. — Problems of Labor. 8 Gr., 33 Se., 34 Ju., 14 So., 3 Sp., 3 Sc., 2 Di. Total 97.

9b ²hf. Professor RIPLEY. — Economics of Corporations. 10 Gr., 49 Se., 74 Ju., 24 So., 3 Sp., 9 Sc., 1 Di. Total 170.

4. Professor RIPLEY. — Statistics. Theory, method, and practice. 8 Gr., 2 So. Total 10.

5 ¹hf. Professor RIPLEY. — Economics of Transportation. 9 Gr., 50 Se., 45 Jr., 13 So., 2 Sp., 6 Sc. Total 125.

8a ²hf. Asst. Professor ANDREW. — Money. A general survey of currency legislation, experience, and theory in recent times. 8 Gr., 13 Se., 39 Ju., 24 So., 4 Sp., 3 Sc. Total 91.

8*b* ^{1}*hf.* Dr. SPRAGUE. — Banking and the History of the leading Banking Systems. 6 Gr., 30 Se., 30 Ju., 9 So., 1 Sp., 1 Sc. Total 77.

12*a* ^{2}*hf.* Dr. SPRAGUE. — International Trade and International Payments. 5 Gr., 6 Se., 7 Ju., 3 So., 1 Sp., 1 Sc. Total 23.

12*b* ^{1}*hf.* Asst. Professor ANDREW. — History and Theory of Commercial Crises. 5 Gr., 15 Se., 10 Ju., 5 So., 2 Sp., 2 Sc. Total 39.

7*a* ^{1}*hf.* Asst. Professor BULLOCK. — A General Introduction to Public Finance exclusive of Taxation. 3 Gr., 1 Se., 1 Ju., 1 Sc., 1 Di. Total 7.

7*b* ^{2}*hf.* Professor TAUSSIG. — The Theory and Methods of Taxation, with special reference to local taxation, in the United States. 3 Gr., 3 Se., 2 Ju., 1 So., 3 Sp., 1 Sc. Total 13.

16 ^{2}*hf.* Asst. Professor BULLOCK. — The Financial History of the United States. 11 Se., 12 Ju., 2 So., 1 Sp., 1 Sc. Total 27.

18 ^{1}*hf.* Mr. W. M. COLE. — The Principles of Accounting. 2 Gr., 33 Se., 12 Ju., 1 So., 1 Sp., 2 Sc. Total 51.

21. Asst. Professor WYMAN. — Principles of Law governing Industrial Relations. 11 Gr., 89 Se., 30 Ju., 8 So., 3 Sp., 6 Sc., 1 Law. Total 148.

23 ^{2}*hf.* Professor CARVER. — The Economics of Agriculture, with special reference to American conditions. 5 Gr., 32 Se., 28 Ju., 17 So., 2 Fr., 8 Sp., 6 Sc., 1 Me. Total 99.

‡24 ^{1}*hf.* Asst. Professor GAY. — General Outlines of Agrarian History. 3 Se., 1 Ju. Total 4.

Primarily for Graduates : —

‡15. Asst. Professor BULLOCK. — The History and Literature of Economics to the opening of the Nineteenth Century. 5 Gr. Total 5.

‡13 ^{1}*hf.* Professor CARVER. — Methods of Economic Investigation. 5 Gr., 3 Se., 3 R. Total 11.

‡22. Asst. Professor GAY. — Outlines of the Development of Economic Thought in Germany and France in the Nineteenth Century. 1 Gr. Total 1.

COURSES OF RESEARCH.

20*b*. Asst. Professor GAY. — Selected Topics in English Economic History. 2 Gr. Total 2.

20*c* ^{2}*hf.* Professor TAUSSIG. — Adam Smith and Ricardo. 6 Gr., 1 Se., 1 Law. Total 8.

20*e*. Dr. SPRAGUE. — Selected Topics in the Economic History of the United States. 7 Gr. Total 7.

20*g*. Asst. Professor BULLOCK. — Studies in American Finance. 1 Gr. Total 1.

20*i*. Special Subjects of Research for advanced students in Economics. 1 Gr. Total 1.

History of Religions.

For Undergraduates and Graduates : —

1 ^{1}*hf.* Professor G. F. MOORE. — Introduction to the Study of Religion. The phenomena of the lower religions; genesis and evolution of religion; nature of the religious sentiment; origin of religious conceptions; fundamental problems of the philosophy of religion. 2 Gr., 5 Se., 1 Ju., 5 So., 1 Sp., 9 Div. Total 23.

2. Professor G. F. Moore. — History of Religions in Outline. The Religions of China and Japan, Egypt, Babylonia and Assyria, and the Western Semites (including Judaism and Mohammedanism). The Religions of India, Persia, the Greeks, Romans, Germans, and Celts; Christianity.
2 Gr., 17 Se., 30 Ju., 29 So., 7 Fr., 5 Sp., 4 Sc., 9 Di. Total 103.

Primarily for Graduates: —

8 ^{2}*hf*. Professor Kittredge and Asst. Professor F. N. Robinson. — Germanic and Celtic Religions. 1 Se., 2 Ju. Total 3.

Philosophy.

Primarily for Undergraduates: —

1*a*. Professors Royce and Münsterberg. — General Introduction to Philosophy. Logic. Psychology.
2 Gr., 6 Se., 83 Ju., 85 So., 25 Fr., 11 Sp., 14 Sc., 2 Di. Total 228.

1*b*. Professor Palmer and Asst. Professor Santayana. — Outlines of the History of Philosophy, Ancient and Modern.
3 Gr., 4 Se., 33 Ju., 34 So., 16 Fr., 6 Sp., 5 Sc. Total 101.

For Undergraduates and Graduates: —

2 ^{1}*hf*. Dr. Perry. — Advanced Psychology.
7 Gr., 3 Se., 4 Ju., 3 So., 1 Sp. Total 18.

14 ^{1}*hf*. Dr. Holt. — Experimental Psychology (elementary laboratory course).
6 Gr., 1 Ju. Total 7.

14*a* ^{2}*hf*. Dr. Yerkes. — Comparative Psychology. The Mental Life of Animals.
5 Gr., 14 Se., 12 Ju., 16 So., 5 Fr., 2 Sp., 2 Sc., 1 Di., 1 Me. Total 58.

4. Professor Palmer. — Ethics. The Theory of Morals, considered constructively. 10 Gr., 14 Se., 13 Ju., 4 So., 3 Sp., 10 Di. Total 54.

5. Professor Peabody, assisted by Dr. D. C. Rogers. — The Ethics of the Social Questions. The problems of Poor-Relief, the Family, Temperance, and various phases of the Labor Question, in the light of ethical theory.
3 Gr., 48 Se., 34 Ju., 14 So., 6 Sp., 5 Sc., 4 Di. Total 114.

10*a* ^{1}*hf*. Asst. Professor Santayana. — Philosophy of History. Ideals of Society, Science, and Religion.
4 Gr., 21 Se., 8 Ju., 6 So., 2 Sp., 1 Sc. Total 42.

10 ^{2}*hf*. Asst. Professor Santayana. — Aesthetics. The Philosophy of Art, with a survey of Aesthetic Theories.
2 Gr., 18 Se., 11 Ju., 10 So., 1 Fr., 5 Sp., 6 Sc., 1 Me. Total 54.

9. Asst. Professor Santayana. — Metaphysics. The Fundamental Problems of Theoretical Philosophy. Realism and Idealism; Freedom, Teleology, and Theism. 2 Gr., 4 Se., 2 Ju., 1 So., 1 Sp., 1 Di. Total 11.

15. Professor Royce. — Theory of Knowledge. The Processes of Conception, Judgment, and Reasoning. The Relations of Thought and Reality. The Elements of Symbolic Logic. 11 Gr., 1 Ju., 1 Di. Total 13.

3. Dr. Miller. — The Philosophy of Nature, with especial reference to Man's place in Nature. The Fundamental Conceptions of Science; the relation of Mind and Body; Evolution. 2 Gr., 2 Se., 5 Ju. Total 9.

11*a* ^{1}*hf*. Dr. Perry. — Descartes, Spinoza, and Leibnitz. 1 Se., 1 So., 1 Di. Total 3.

11*b* ^{2}*hf*. Dr. Perry. — The History of English Philosophy from Locke to Hume. 3 Gr., 2 So. Total 5.

8. Dr. Perry. — The Kantian Philosophy. 4 Gr., 1 Se. Total 5.

16. Dr. Miller. — Ethical Ideals of the Nineteenth Century. Mill, Carlyle, Emerson, Browning, and Arnold. 1 Gr., 2 Ju., 2 So., 2 Sp., 1 Di. Total 8.

17. Professor E. C. Moore. — History of Christian Thought since Kant. 2 Gr., 1 Se., 1 Ju., 2 Sp., 13 Div. Total 19.

18. Dr. J. H. Woods. — The Philosophical Systems of India, with special reference to Vedanta, Sankhya, and Yoga. 2 Se., 1 Di. Total 3.

Seminary Courses.

Primarily for Graduates: —

‡20*a*. Professor Münsterberg, and Drs. Holt and Yerkes. — Psychological Laboratory. Experimental investigations. 11 Gr., 2 R. Total 13.

20*b*. Professor Münsterberg. — Psychological Seminary. Standpoints and Controversies of Modern Psychologists. 19 Gr., 1 Di. Total 20.

‡20*c*. Professor James. — Metaphysical Seminary. A pluralistic description of the World. 13 Gr., 1 Se., 2 Di., 4 R. Total 20.

‡20*d*. Professor Palmer. — Ethical Seminary. Systematization of Ethics. 9 Gr. Total 9.

‡20*e*. Professor Peabody. — Sociological Seminary. The ethical teaching of the New Testament. 3 Gr., 1 Se., 18 Di. Total 22.

‡20*f*. Professor Royce. — Logical Seminary. The Problems of Logic. 13 Gr., 1 R. Total 14.

‡20*g*. Dr. Miller. — Seminary in the History of Modern Philosophy. Idealistic Systems, with special attention to that of Lotze. 1 Gr. Total 1.

20*h*. Opportunities were offered for special research in any portion of philosophy, including education and the ethics of the social questions, under the supervision of the appropriate professors of the Division of Philosophy. 2 Gr., 1 Se., 1 R. Total 4.

Education.

For Undergraduates and Graduates: —

1. Mr. A. O. Norton. — The History of Educational Theories and Practices. 10 Gr., 4 Se., 13 Ju., 9 So., 1 Fr., 1 Sp., 3 Sc., 1 Me. Total 42.

2*a* ^{1}*hf*. Professor Hanus. — Introduction to the Study of Education. Discussion of Educational Principles. 16 Gr., 17 Se., 7 Ju., 7 So., 2 Sp., 4 Sc , 1 Me. Total 54.

2*b* ^{2}*hf*. Professor Hanus. — The Development of Schools and School Systems in America, more particularly in Massachusetts. Contemporary Tendencies and Problems. 3 Gr., 5 Se., 1 So., 1 Sc. Total 10.

5 ^{1}*hf*. Mr. A. O. Norton. — The Education of the Individual. Historical and critical study of modern views. 3 Gr., 2 Se., 1 So., 1 Sp., 3 Sc. Total 10.

Primarily for Graduates: —

‡8. Professor Hanus, assisted by Mr. A. O. Norton. — Organization and Management of Public Schools and Academies. Supervision, Courses of Study, and Instruction.
19 Gr., 12 Se., 1 Ju., 2 So., 1 Sp., 3 Sc., 1 Di., 1 Me., 8 R. Total 48.

‡10c¹hf. Mr. W. B. Snow. — The Methods and Equipment of a teacher of French in secondary schools. 2 Ju., 1 So., 3 R. Total 6.

Seminary Course.

‡20a. Professor Hanus. — Seminary. Contemporary Problems in Education.
10 Gr., 1 So., 1 Di. Total 12.

The Fine Arts.

Primarily for Undergraduates: —

1. Professor Charles H. Moore, assisted by Mr. Mower. — Principles of Delineation, Color, and Chiaroscuro, with some consideration of historic forms of Art, and the conditions which have influenced them.
2 Gr., 4 Se., 5 Ju., 14 So., 18 Fr., 13 Sc., 1 Bu. Total 57.

2. Professor Charles H. Moore. — Principles of Design in Architecture, Sculpture, and Painting, as exemplified in the Arts of past ages.
2 Gr., 3 Se., 1 Ju., 1 So., 4 Sc. Total 11.

For Undergraduates and Graduates: —

4. Professor Charles H. Moore and an assistant. — The Fine Arts of the Middle Ages and the Renaissance.
4 Gr., 28 Se., 80 Ju., 97 So., 22 Fr., 8 Sp., 21 Sc. Total 260.

Primarily for Graduates: —

‡20b. Professor Charles H. Moore. — History and Principles of Engraving.
3 Gr., 1 Ju., 1 So., 3 R. Total 8.

‡20d. Dr. Chase. — Classical Archaeology (advanced course). The history of Greek vase painting. 1 Gr., 1 Se., 2 R. Total 4.

Architecture.

The courses in Architecture are intended primarily for students in the Lawrence Scientific School, and only Courses 1a, 1b, and 1c may be counted towards the degree of A.B.

1a. Professor H. L. Warren, assisted by Messrs. Swan and Mowll. — Technical and Historical Development of the Ancient Styles, with especial reference to Classic Architecture.
2 Gr., 2 Se., 6 Ju., 6 So., 2 Fr., 24 Sc., 2 Bu. Total 44.

1c. Professor H. L. Warren, assisted by Messrs. Swan and Mowll. — Technical and Historical Development of Renaissance and Modern Architecture. 3 Gr., 1 Se., 5 Ju., 1 So., 1 Sp., 16 Sc. Total 27.

2a. Professor H. L. Warren, and Messrs. Swan and Mowll. — Elementary Architectural Drawing. The Orders.
2 Gr., 2 Se., 5 Ju., 5 So., 1 Fr., 20 Sc., 1 Bu. Total 36.

2b. Mr. Mowll. — Descriptive Geometry. Stereotomy; Shades, Shadows, and Perspective. 13 Sc. Total 13.

3a. Mr. J. LINDON SMITH, assisted by Mr. SWAN. — Freehand Drawing.
4 Gr., 1 So., 20 Sc., 1 Bu. Total 26.

3b. Mr. J. LINDON SMITH, assisted by Mr. SWAN. — Freehand Drawing (second course). 1 Gr., 10 Sc. Total 11.

3c. Mr. J. LINDON SMITH, assisted by Mr. SWAN. — Freehand Drawing (third course). 2 Gr., 6 Sc. Total 8.

4a. Professor H. L. WARREN, and Messrs. NEWTON and MOWLL. — Elementary Architectural Design. 3 Gr., 14 Sc., 1 Bu. Total 18.

4b. Professor H. L. WARREN, and Messrs. NEWTON and MOWLL. — Architectural Design (second course). 2 Gr., 4 Sc. Total 6.

4c. Professor H. L. WARREN, and Messrs. NEWTON and MOWLL. — Architectural Design (third course). 6 Sc. Total 6.

5 ^{2}*hf.* Messrs. NEWTON and SWAN. — Building Construction: Carpentry.
8 Sc. Total 8.

6 *hf.* Mr. GARBUTT. — Modelling. 1 Gr., 9 Sc. Total 10.

7a. Dr. ROSS. — Theory of Design. Pure Design (Balance, Rhythm, Harmony) and Design in Representation.
4 Gr., 1 Se., 8 Ju., 2 So., 1 Fr., 6 Sc. Total 22.

Primarily for Graduates: —

3d. Mr. J. LINDON SMITH. — Freehand Drawing (advanced course).
1 Gr., 2 Sc. Total 3.

4d. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design (advanced course). 1 Gr. Total 1.

COURSES OF RESEARCH.

20a. Professor H. L. WARREN. — Competent Graduate Students who satisfied the instructor of their fitness to pursue advanced work were directed in the study of special periods in the history of architecture.
2 Gr. Total 2.

20b. Dr. ROSS. — Advanced Practice in Pure Design and in Representation.
2 Se., 4 Sc. Total 6.

OPTIONAL COURSE.

Mr. H. D. MURPHY. — A Course in Drawing from the Life.

Landscape Architecture.

For Undergraduates and Graduates: —

1. Professor OLMSTED, and Messrs. SHURTLEFF and PRAY, with five lectures by Professors GOODALE and SHALER. — Principles of Landscape Architecture.
1 Gr., 4 Se., 4 Ju., 5 So., 19 Sc., 1 Bu. Total 34.

2. Professor OLMSTED, and Messrs. SHURTLEFF and PRAY. — Practice in Design (first course). 1 Gr., 3 Sc., 1 Bu. Total 5.

3. Professor OLMSTED, and Messrs. SHURTLEFF and PRAY. — Practice in Design (second course). 1 Gr., 2 Sc. Total 3.

Primarily for Graduates: —

20. Graduate Students and others suitably prepared were allowed to pursue special advanced work under the direction of Professor OLMSTED.
1 Gr. Total 1.

Forestry.

1 ^{2}*hf.* Mr. Fisher. — Silviculture. The characteristics of forests; the forest regions of the United States; special consideration of trees important in forestry; the treatment of forests; methods of reproducing forests; tree planting. 3 Gr., 4 Se., 1 Ju., 2 So., 1 Sp., 10 Sc., 2 Bu. Total 23.

2 ^{2}*hf.* Mr. Fisher. — Forest Measurements. Methods of computing the contents of felled and standing trees and of whole stands; the estimation of timber; the use and construction of American log scales; determination of diameter, height, and volume increment.
1 Gr., 3 Se., 1 Ju., 2 So., 1 Sp., 9 Sc., 1 Bu. Total 18.

3 ^{1}*hf.* Mr. Jack. — Dendrology, or Forest Botany.
1 Gr., 1 So., 11 Sc. Total 13.

Music.

For Undergraduates and Graduates: —

1. Asst. Professor Spalding. — Harmony.
1 Se., 6 Ju., 6 So., 19 Fr., 3 Sp., 3 Sc. Total 38.

2. Asst. Professor Spalding. — Counterpoint.
3 Se., 3 Ju., 13 So., 2 Fr., 4 Sp. Total 25.

2*a hf.* Asst. Professor Spalding. — Vocal Counterpoint, with analysis of choral works of the great composers. 2 Se., 4 Ju., 1 So., 2 Sp. Total 9.

3. Professor Paine. — History of Music.
2 Gr., 19 Se., 40 Ju., 41 So., 8 Fr., 3 Sp., 7 Sc., 1 Asst. Total 121.

4 *hf.* Asst. Professor Spalding. — Musical Form, with analysis of the works of the great composers. 2 Se., 4 Ju., 9 So., 1 Fr., 3 Sp. Total 19.

Primarily for Graduates: —

‡5. Mr. Converse. — Canon and Fugue. Free Thematic Music.
2 Se., 1 Ju., 1 Sp. Total 4.

‡6. Professor Paine. — Advanced Fugue and Free Composition.
1 Se., 1 So., 1 Sp. Total 3.

‡7. Professor Paine and Asst. Professor Spalding. — Instrumentation.
3 Se., 1 Ju., 1 So., 1 Sp., 2 R. Total 8.

Mathematics.

Primarily for Undergraduates: —

F. Dr. Bouton, and Messrs. Whittemore and Froehlich. — Trigonometry and Plane Analytic Geometry.
1 Se., 6 Ju., 21 So., 56 Fr., 5 Sp., 2 Sc. Total 91.

A ^{1}*hf.* Mr. Ransom. — Logarithms. Plane and Spherical Trigonometry.
2 So., 7 Fr., 1 Bu. Total 10.

B ^{2}*hf.* Mr. Ransom. — Plane Analytic Geometry (elementary course).
2 Se., 1 Ju., 2 So., 7 Fr. Total 12.

C. Asst. Professor Bôcher. — Plane and Solid Analytic Geometry (extended course). 1 So., 18 Fr., 1 Sc. Total 20.

D^{2}*hf.* Mr. Whittemore. — Algebra.
1 Gr., 2 Se., 9 Ju., 17 So., 25 Fr., 4 Sp. Total 58.

E^{1}*hf.* Drs. Bouton and Huntington, and Mr. Whittemore. — Solid Geometry.
1 Gr., 10 Se., 5 Ju., 19 So., 29 Fr., 24 Sc., 1 Me. Total 89.

G^{2}*hf.* Dr. Bouton. — Descriptive Geometry.
1 Se., 2 Ju., 5 So., 2 Fr., 2 Sc. Total 12.

2. Professor Osgood. — Differential and Integral Calculus (first course).
3 Gr., 5 Se., 3 Ju., 18 So., 4 Fr., 2 Sp., 1 Sc. Total 36.

4. Professor Osgood. — The Elements of Mechanics.
1 Gr., 5 Se., 3 Ju., 4 So. Total 13.

For Undergraduates and Graduates : —

3. Professor Byerly. — Introduction to Modern Geometry and Modern Algebra.
6 Gr., 1 Se., 1 Ju., 3 So., 1 Sc. Total 12.

5. Professor Byerly. — Differential and Integral Calculus (second course).
10 Gr., 5 Se., 6 Ju., 1 So., 1 Sc. Total 23.

12 ^{1}*hf.* Asst. Professor Bôcher. — Infinite Series and Products.
3 Gr., 1 Ju. Total 4.

14*a*. Asst. Professor Bôcher. — Algebra. The Properties of Polynomials; Invariants.
8 Gr. Total 8.

24 ^{1}*hf.* Dr. Bouton. — The Theory of Numbers. 1 Gr., 1 Se., 1 So. Total 3.

18 ^{2}*hf.* Dr. Bouton. — The Elementary Theory of Differential Equations.
7 Gr., 2 Se., 2 Ju. Total 11.

6. Professor J. M. Peirce. — The Calculus of Quaternions (first course). Elementary principles and applications.
10 Gr., 3 Se., 2 Ju., 1 Sc. Total 16.

8 ^{1}*hf.* Professor Byerly. — Dynamics of a Rigid Body.
2 Gr., 2 Se., 2 Ju. Total 6.

32. Mr. Whittemore. — Celestial Mechanics. 3 Gr., 1 Ju. Total 4.

Primarily for Graduates : —

‡13. Professor Osgood. — The Theory of Functions (introductory course).
5 Gr., 1 Ju., 2 R. Total 8.

‡7*b* ^{1}*hf.* Professor J. M. Peirce. — Bipolar, Triangular, and Tetrahedral Coördinates of Points, Lines, and Planes.
2 Gr. Total 2.

‡7*c* ^{2}*hf.* Professor J. M. Peirce. — The Application of Tetrahedral Coördinates to Quadric Surfaces.
2 Gr. Total 2.

‡21*a* ^{2}*hf.* Professor J. M. Peirce. — The Algebra of Logic. 2 Gr., 1 Ju. Total 3.

‡21*b* ^{1}*hf.* Professor J. M. Peirce. — The Calculus of Finite Differences.
2 Gr. Total 2.

‡10. Professors Byerly and B. O. Peirce. — Trigonometric Series. Introduction to Spherical Harmonics. The Potential Function.
5 Gr., 1 Se. Total 6.

‡19 ^{2}*hf.* Asst. Professor Bôcher. — Linear Differential Equations.
4 Gr., 1 Ju. Total 5.

‡25 ^{1}*hf.* Dr. Bouton. — Geometrical Transformations, with special reference to the work of Sophus Lie.
6 Gr. Total 6.

Courses of Reading and Research.

20a ^{2}*hf*. Professor J. M. Peirce. — Selected Portions of Schröder's Algebra of Logic. 1 Ju. Total 1.

‡20g. Dr. Bouton. — Selected Topics in the Theory of Continuous Groups. 1 R. Total 1.

‡20h. Mr. Whittemore. — Selected Topics in Differential Geometry. 1 Gr. Total 1.

Astronomy.

Primarily for Undergraduates: —

1 ^{1}*hf*. Professor Willson and Mr. J. F. Cole. — Descriptive Astronomy. 1 Gr., 19 Se., 17 Ju., 6 So., 5 Fr., 4 Sp., 17 Sc., 1 Di. Total 70.

2 ^{2}*hf*. Mr. J. F. Cole. — Practical Astronomy. Application of Astronomy to Navigation and Exploration. 1 Se., 4 Ju., 2 So., 2 Sp., 6 Sc. Total 15.

For Undergraduates and Graduates: —

3. Professor Willson. — Practical Astronomy. 2 Se. Total 2.

Primarily for Graduates: —

5. Professor Willson. — Practical Astronomy. Instruments of the fixed observatory. Meridian Circle; equatorial instrument; absolute determinations. 1 Ju. Total 1.

Engineering.

The courses in Engineering are intended primarily for students in the Lawrence Scientific School, but many of them may be counted towards the degree of A.B. The Catalogue shows what courses may be so counted.

1a ^{1}*hf*. Asst. Professor Love, Mr. Frizell, and Dr. Huntington. — Algebra. 5 Ju., 8 So., 6 Fr., 94 Sc. Total 113.

1b $^{1 \text{ or } 2}$*hf*. Asst. Professor Love, Mr. Frizell, and Dr. Huntington. — Trigonometry. 2 Gr., 9 Ju., 24 So., 13 Fr., 94 Sc., 1 Bu. Total 143.

1d ^{2}*hf*. Asst. Professor Love, Mr. Frizell, and Dr. Huntington. — Analytic Geometry. 2 Gr., 2 Se., 3 Ju., 14 So., 8 Fr., 1 Sp., 109 Sc. Total 139.

1c. Asst. Professor Love, Mr. Frizell, and Dr. Huntington. — Differential and Integral Calculus. 3 Gr., 3 Se., 17 Ju., 12 So., 1 Sp., 63 Sc. Total 99.

3a. Messrs. Kennedy, A. E. Norton, Howes, and Updegraff. — Mechanical Drawing. 8 Se., 12 Ju., 17 So., 21 Fr., 3 Sp., 97 Sc. Total 158.

3b ^{2}*hf*. Mr. Moyer. — Descriptive Geometry. 10 Ju., 7 So., 2 Fr., 43 Sc. Total 62.

3d ^{1}*hf*. Messrs. Kennedy and A. E. Norton— Mechanism. Study of Gearing and Mechanical Movements. 1 Gr., 3 Se., 12 Ju., 7 So., 61 Sc. Total 84.

4a. Asst. Professor Hughes and assistants. — Plane Surveying. (See page 86.) 2 Gr., 1 Se., 23 Ju., 29 So., 11 Fr., 1 Sp., 46 Sc. Total 113.

4c. Asst. Professor Hughes and assistants. — Geodetic Surveying. (See page 86.) 2 Se., 15 Ju., 20 So., 5 Fr., 1 Sp., 38 Sc. Total 81.

4d. Asst. Professor Hughes and assistants. — Railroad Surveying. (See page 86.) 2 Gr., 2 Se., 15 Ju., 20 So., 5 Fr., 1 Sp., 46 Sc. Total 91.

10*a*. Asst. Professor BURKE and Mr. MARKHAM.—Chipping, Filing, and Fitting. (See page 86.)
2 Gr., 1 Ju., 2 So., 17 Sc. Total 22.

10*b*. Asst. Professor BURKE and Mr. MARKHAM.—Blacksmithing. (See page 86.)
3 Gr., 1 Ju., 2 So., 17 Sc. Total 23.

10*c*. Asst. Professor BURKE and Mr. MARKHAM.—Pattern-making and Foundry Practice. (See page 86.)
2 Gr., 1 Ju., 18 Sc. Total 21.

10*e*. Asst. Professor BURKE and Mr. MARKHAM.—Machine Shop Practice. (See page 86.)
2 Gr., 1 Ju., 19 Sc. Total 22.

For Undergraduates and Graduates:—

4*e* ^{2}***hf*.** Mr. MCCLINTOCK.—Construction and Maintenance of Common Roads.
1 Gr., 1 So., 24 Sc., 1 Bu. Total 27.

4*f* ^{1}***hf*.** Asst. Professor HUGHES.—Railroad Engineering (second course). Problems in railroad construction and maintenance.
1 Gr., 1 Se., 2 Ju., 17 Sc. Total 21.

5*b* ^{1}***hf*.** Asst. Professor JOHNSON and Mr. MOYER.—Elementary Statics. Graphic and Algebraic Methods.
2 Gr., 5 Se., 19 Ju., 13 So., 1 Fr., 90 Sc. Total 130.

5*d* ^{2}***hf*.** Asst. Professor JOHNSON and Mr. MOYER.—Resistance of Materials (introductory course). Elementary Structural Design.
2 Gr., 5 Se., 14 Ju., 10 So., 71 Sc. Total 102.

5*a*. Professor HOLLIS and Mr. ROSS.—Applied Mechanics.
3 Gr., 4 Se., 4 Ju., 62 Sc. Total 73.

5*c* ^{1}***hf*.** Professor HOLLIS.—Resistance of Materials (second course).
1 Gr., 29 Sc. Total 30.

6*a* ^{2}***hf*.** Asst. Professor HUGHES.—Hydraulics and Hydraulic Motors.
4 Gr., 1 Se., 2 Ju., 49 Sc. Total 56.

6*c* ^{1}***hf*.** Asst. Professor HUGHES.—Water Supply and Sanitary Engineering.
2 Gr., 19 Sc., 1 Bu. Total 22.

6*d* ^{2}***hf*.** Asst. Professor HUGHES.—Canals, Rivers, and Harbors. Irrigation.
1 Gr., 17 Sc. Total 18.

7*a*. Asst. Professor JOHNSON.—Bridges and Buildings. Design of Framed Structures.
1 Gr., 13 Sc. Total 14.

8*a* ^{2}***hf*.** Professor WOLFF and Asst. Professor JOHNSON.—Building Stones, Masonry and Foundations.
3 Gr., 1 Ju., 25 Sc., 1 Bu. Total 30.

11*a* ^{2}***hf*.** Asst. Professor MARKS and Mr. HASKELL.—Steam Machinery (introductory course).
3 Gr., 10 Se., 15 Ju., 18 So., 1 Sp., 76 Sc. Total 123.

12*b* ^{1}***hf*.** Asst. Professor MARKS and Mr. HASKELL.—Elements of Thermodynamics. Theory of Heat Engines.
2 Gr., 3 Se., 2 Ju., 47 Sc. Total 54.

12*a* ^{1}***hf*.** Asst. Professor MARKS.—Efficiency and Economics of Heat Engines.
1 Se., 13 Sc. Total 14.

12*c* ^{1}***hf*.** Asst. Professor BURKE.—Heating and Ventilation.
16 Sc. Total 16.

13*a*. Asst. Professor MARKS, and Messrs. MOYER and HASKELL.—Engineering Laboratory. Introductory course in experimental methods.
5 Gr., 1 Se., 2 Ju., 51 Sc. Total 59.

13*b*. Asst. Professor MARKS and Mr. MOYER. — Engineering Laboratory (second course). 1 Se., 15 Sc. Total 16.

14*a* ²*hf*. Mr. KENNEDY. — Machine Design (introductory course). 1 Gr., 2 Se., 27 Sc. Total 30.

14*b*. Professor HOLLIS. — Machine Design (second course). 12 Sc. Total 12.

15*a*. Professor HOLLIS. — Marine Engines and Boilers. 2 Sc. Total 2.

16*a*. Asst. Professor ADAMS and Mr. WHITING. — Generation, Transmission, and Utilization of Electrical Energy (elementary course). 7 Gr., 3 Se., 6 Ju., 3 So., 50 Sc. Total 69.

16*c*. Professor KENNELLY. — Direct Current Dynamo-Electric Machinery. 3 Gr., 4 Se., 19 Sc. Total 26.

16*e*. Asst. Professor ADAMS. — Alternating Currents and Alternating Current Machinery. 1 Gr., 2 Se., 10 Sc. Total 13.

16*d*. Asst. Professor ADAMS. — Dynamo Design. 1 Gr., 11 Sc. Total 12.

16*f*. Mr. WHITING. — Electrical Engineering Laboratory. 1 Gr., 12 Sc. Total 13.

17*a* ¹*hf*. Professor KENNELLY. — Electric Transmission and Distribution of Power. 1 Gr., 12 Sc. Total 13.

17*b* ²*hf*. Professor KENNELLY. — Telegraphy and Telephony. 14 Sc. Total 14.

21. Professor HOLLIS. — Conference on Engineering Subjects. 35 Sc. Total 35.

22 ²*hf*. Asst. Professor WYMAN. — Contracts and Specifications. The Principles of Common Law as applied to Contracts. 7 Gr., 1 Sp., 50 Sc. Total 58.

Primarily for Graduates: —

COURSE OF RESEARCH.

20*b*. Asst. Professor MARKS. — Heat engines. 1 Gr. Total 1.

Physics.

Primarily for Undergraduates: —

B. Professor HALL, Dr. AYRES, and Mr. SERVISS. — Experimental Physics (elementary course). 4 Se., 6 Ju., 19 So., 37 Fr., 17 Sp., 52 Sc. Total 135.

C. Asst. Professor SABINE, Dr. H. W. MORSE, and Mr. L. D. HILL. — Experimental Physics. Mechanics, Sound, Light, Magnetism, and Electricity. 5 Gr., 9 Se., 24 Ju., 32 So., 44 Fr., 5 Sp., 85 Sc. Total 204.

1. Professor HALL and Dr. MCKAY. — General Descriptive Physics. 1 Gr., 2 Se., 4 Ju., 11 So., 6 Fr., 18 Sc. Total 42.

2 ¹*hf*. Asst. Professor SABINE. — The Theory of Light in its application to familiar optical phenomena and to optical instruments. 1 Gr., 1 Se., 2 Ju., 3 So., 7 Sc. Total 14.

11 ²*hf*. Dr. H. W. MORSE. — The Theory of Primary and Secondary Batteries. 5 Se., 8 Ju., 5 So., 1 Sp., 11 Sc. Total 30.

For Undergraduates and Graduates: —

3. Professor B. O. PEIRCE and Dr. AYRES. — Electrostatics, Electrokinematics, and parts of Electromagnetism. 2 Gr., 4 Ju., 4 So., 1 Sp., 19 Sc. Total 30.

12 ^{1}*hf.* Dr. Lyman. — Electric Conduction in Gases with special reference to the Theory of Ions. 5 Gr., 1 Ju., 2 So., 1 Sp., 1 Sc. Total 10.

4. Professor Trowbridge, Dr. G. W. Pierce, and Dr. Lyman. — Magnetism, Electromagnetism, and Electrodynamics. 3 Gr., 2 Se., 8 Sc. Total 13.

5. Asst. Professor Sabine. — Light. 5 Gr., 1 Se., 1 Ju. Total 7.

6*a* ^{1}*hf.* Professor Hall. — Elements of Thermodynamics. 4 Gr., 1 Se., 3 Ju., 1 So. Total 9.

6*b* ^{2}*hf.* Professor Hall. — Modern Developments and Applications of Thermodynamics. 3 Gr., 1 Se., 2 Ju., 1 So., 1 Sc. Total 8.

14 ^{1}*hf.* Dr. H. W. Morse. — The Theory of Photography. 1 Gr., 3 Se., 2 Ju., 1 So., 1 Sp., 3 Sc. Total 11.

15 ^{2}*hf.* Dr. G. W. Pierce. — Radiation. 3 Gr., 1 Se. Total 4.

Primarily for Graduates: —

‡10. Professor B. O. Peirce and Dr. G. W. Pierce. — The Mathematical Theory of Electricity and Magnetism (second course). 3 Gr. Total 3.

Courses of Research.

20*a*. Professor Trowbridge. — Light and Electricity. 2 Gr. Total 2.

20*c*. Professor Hall. — Heat and Electricity. 3 Gr. Total 3.

20*d*. Asst. Professor Sabine. — Light and Heat. 3 Gr. Total 3.

Chemistry.

Primarily for Undergraduates: —

1. Professor C. L. Jackson, Mr. A. D. Wyman, and seven assistants. — Descriptive Inorganic Chemistry. 5 Gr., 13 Se., 35 Ju., 66 So., 88 Fr., 6 Sp., 121 Sc. Total 334.

2 ^{1}*hf.* Dr. Torrey. — Organic Chemistry (elementary course). 3 Gr., 8 Se., 13 Ju., 17 So., 1 Fr., 2 Sp., 16 Sc. Total 60.

3 Professor Sanger, Dr. Torrey, Mr. Langmaid, and five assistants. — Qualitative Analysis. 5 Gr., 9 Se., 25 Ju., 32 So., 1 Sp., 40 Sc. Total 112.

4. Dr. Baxter and Mr. Hines. — Quantitative Analysis, gravimetric and volumetric. 3 Gr., 3 Se., 11 Ju., 10 So., 10 Sc. Total 37.

For Undergraduates and Graduates: —

8 ^{2}*hf.* Professor Richards and Dr. Lewis. — The Historical Development of Chemical Theory. 3 Gr., 5 Se., 14 Ju., 8 So., 13 Sc. Total 43.

11*a*. Dr. Pringsheim. — Industrial Chemistry. Average attendance 12.

9 ^{1}*hf.* Dr. Baxter and Mr. Gibson. — Advanced Quantitative Analysis. 4 Gr., 3 Se., 2 Ju., 7 Sc. Total 16.

10 ^{2}*hf.* Dr. Baxter and Mr. Gibson. — Gas Analysis. 3 Gr., 4 Se., 1 Ju., 6 Sc. Total 14.

5. Dr. Torrey and Mr. Russe. — The Carbon Compounds. 6 Gr., 9 Se., 11 Ju., 1 So., 10 Sc. Total 37.

Primarily for Graduates: —

6. Professor Richards and Mr. R. C. Wells. — Physical Chemistry.
8 Gr., 6 Se., 2 Ju., 6 Sc. Total 22.

12 ^{1}*hf.* Dr. Baxter. — Photochemistry, including the use of Optical Instruments in Chemistry. 3 Gr., 2 Se., 1 Ju., 1 Sc. Total 7.

7 ^{2}*hf.* Dr. Lewis. — Electrochemistry. 4 Gr., 5 Se., 2 Ju., 4 Sc. Total 15.

13 ^{2}*hf.* Dr. Lewis. — Experimental Electrochemistry.
2 Gr., 1 Se., 1 Ju., 2 Sc. Total 6.

14. Dr. Lewis. — Advanced Physical Chemistry. Chemical Kinetics and Equilibrium. 4 Gr. Total 4.

Courses of Research.

20*a*. Professor Richards. — Inorganic Chemistry, including Determination of Atomic Weights. 1 Gr. Total 1.

20*b*. Professor C. L. Jackson. — Organic Chemistry. 6 Gr. Total 6.

20*c*. Dr. Torrey. — Organic Chemistry. 2 Se., 1 Sc. Total 3.

20*d*. Professor Richards. — Physical Chemistry. 4 Gr. Total 4.

20*e*. Professor Sanger. — Applied Chemistry. 3 Gr. Total 3.

20*g*. Dr. Lewis. — Physical Chemistry. 2 Gr. Total 2.

Botany.

Primarily for Undergraduates: —

1 ^{2}*hf.* Professor Goodale and assistants. — Botany (introductory course).
1 Gr., 4 Se., 14 Ju., 55 So., 55 Fr., 8 Sp., 46 Sc., 1 Bu. Total 184.

2 ^{1}*hf.* Professor Thaxter and two assistants. — Morphology of Plants.
4 Gr., 6 Se., 10 Ju., 21 So., 1 Fr., 16 Sc. Total 58.

For Undergraduates and Graduates: —

3. Asst. Professor Jeffrey and an assistant. — Morphology, Histology, Œcology and Physiology of Flowering Plants. 2 Gr., 2 So., 5 Sc. Total 9.

4 ^{2}*hf.* Professor Thaxter and an assistant. — The Bryophyta (Liverworts and Mosses). Lectures and laboratory work.
2 Gr., 1 Se., 1 Ju., 2 So., 1 Sc. Total 7.

5. Professor Goodale and an assistant. — Outlines of Economic Botany.
1 Gr., 1 So. Total 2.

7. Mr. Fernald. — Classification of Flowering Plants, with special reference to the Flora of New England and the Maritime Provinces.
1 Gr., 2 Ju., 1 So., 1 Sc. Total 5.

8 ^{1}*hf.* Asst. Professor Jeffrey and an assistant. — The Anatomy, Development, and Phylogeny of the Tracheate Zoidogama (Pteridophyta. Cycadofilices, Fossil and Lower Gymnosperms). 1 Gr., 1 Ju., 1 So., 1 Sc. Total 4.

11 ^{2}*hf.* Dr. Greenman. — Botanical Geography.
1 Gr., 1 Se., 2 Ju., 5 So., 4 Sc. Total 13.

Primarily for Graduates: —

Courses of Research.

20*a*. Professor Goodale and Asst. Professor Jeffrey. — Experimental Vegetable Physiology. Economic Botany, with special reference to Tropical Plants. Structure and Development of Vascular Plants. 1 Gr., 1 Sc. Total 2.

20*b*. Professors Farlow and Thaxter. — Structure and Development of Cryptogams. 4 Gr. Total 4.

20*c*. Professor B. L. Robinson. — Taxonomy of Phanerogams. 1 Gr. Total 1.

Zoölogy.

Primarily for Undergraduates: —

1 ^{1}*hf*. Asst. Professor G. H. Parker, Mr. G. Smith, and other assistants. — Zoölogy (introductory course).
2 Gr., 7 Se., 15 Ju., 41 So., 35 Fr., 5 Sp., 43 Sc., 1 Bu. Total 149.

2 ^{2}*hf*. Asst. Professor W. E. Castle, Mr. L. J. Cole, and other assistants. — Morphology of Animals.
4 Se., 9 Ju., 19 So., 2 Fr., 1 Sp., 10 Sc. Total 45.

For Undergraduates and Graduates: —

3. Dr. H. W. Rand and Mr. Larrabee. — Comparative Anatomy of Vertebrates. 3 Gr., 5 Se., 9 Ju., 2 So., 10 Sc. Total 29.

4 ^{1}*hf*. Professor Mark and Dr. H. W. Rand. — Microscopical Anatomy.
4 Gr., 2 Se., 2 Ju., 6 Sc. Total 14.

5 ^{2}*hf*. Professor Mark and Dr. H. W. Rand. — Embryology of Vertebrates.
3 Gr., 1 Se., 1 Ju., 6 Sc. Total 11.

9 ^{1}*hf*. Asst. Professor R. T. Jackson. — Fossil Invertebrates.
3 Gr., 1 Se., 1 Sc. Total 5.

9*a* ^{2}*hf*. Asst. Professor R. T. Jackson. — Fossil Invertebrates. Advanced studies of special groups. 1 Se., 1 So., 2 Sc. Total 4.

11. Asst. Professor W. E. Castle. — Variation and Heredity.
4 Gr., 1 Se., 1 So., 2 Sc., 1 Di. Total 9.

13 ^{1}*hf*. Asst. Professor G. H. Parker. — Comparative Histology, with special reference to Nervous Tissues. 5 Gr., 4 Sc. Total 9.

15 ^{2}*hf*. Asst. Professor G. H. Parker. — The Structure and Functions of the Nervous System and its Relation to Animal Habits. Sense Organs.
8 Gr., 4 Sc. Total 12.

Primarily for Graduates: —

Course of Research.

20. Professor Mark, Asst. Professors R. T. Jackson, G. H. Parker, and W. E. Castle. — Zoölogical Investigations. 10 Gr., 3 Sc. Total 13.

Geology.

Geology and Geography.

Primarily for Undergraduates: —

A ^{1}*hf*. Mr. P. S. Smith, assisted by Mr. Tower. — Physiography of the Lands.
2 Gr., 4 Se., 3 Ju., 19 So., 12 Fr., 4 Sp., 26 Sc., 2 Bu. Total 72.

B ^{2}*hf*. Asst. Professor Ward, assisted by Mr. Tower. — Meteorology (elementary course).
1 Gr., 11 Ju., 49 So., 43 Fr., 4 Sp., 29 Sc., 2 Bu. Total 139.

4 ^{1}*hf*. Professor Shaler and Asst. Professor Jaggar, assisted by Messrs. P. S. Smith and Goldthwait. — Elementary Geology.
3 Gr., 27 Se., 62 Ju., 151 So., 167 Fr., 7 Sp., 67 Sc., 2 Bu., 1 Di., 2 Me. Total 489.

5 ^{2}*hf*. Asst. Professor J. B. Woodworth, aided by Mr. Goldthwait and other assistants. — Elementary Field and Laboratory Geology.
3 Gr., 4 Se., 6 Ju., 32 So., 31 Fr., 2 Sp., 41 Sc., 2 Bu. Total 121.

1 ^{1}*hf*. Asst. Professor Ward. — Meteorology (second course).
1 Se., 2 Ju., 1 So., 12 Sc. Total 16.

For Undergraduates and Graduates: —

7 ^{2}*hf*. Professor Davis and an assistant. — Physiography of Europe.
2 Gr., 2 So., 2 Fr., 1 Sp., 12 Sc. Total 19.

8. Asst. Professor J. B. Woodworth, assisted by Mr. P. S. Smith. — General Geology. 2 Gr., 2 Se., 1 Ju., 1 So., 9 Sc. Total 15.

10. Professor H. L. Smyth, assisted by Mr. Fox. — Mining Geology.
1 Se., 1 Ju., 1 So., 27 Sc. Total 30.

22. Asst. Professor Jaggar, assisted by Messrs. Wood and Richards.— Advanced Geological Field Work. Areal Geology in the vicinity of Boston. 5 Gr., 1 Se., 7 Sc. Total 13.

9 ^{2}*hf*. Asst. Professor Jaggar, assisted by Mr. Wood. — Structural and Dynamical Geology of the United States. 1 Gr., 1 So., 3 Sc. Total 5.

16 ^{1}*hf*. Asst. Professor J. B. Woodworth. — Glacial Geology.
1 Gr., 4 Sc. Total 5.

2 ^{2}*hf*. Asst. Professor Ward. — Climatology of the United States.
1 Gr., 1 Se., 4 Ju., 2 So., 8 Sc. Total 16.

19 ^{1}*hf*. Asst. Professor Ward. — General Climatology.
1 Gr., 3 Se., 2 Ju., 6 Sc. Total 12.

14 ^{1}*hf*. Professor Shaler, assisted by Mr. Gregory. — General Palaeontology.
1 Gr., 21 Se., 12 Ju., 9 So., 1 Fr., 1 Sp., 19 Sc. Total 64.

11. Asst. Professor R. T. Jackson, assisted by Mr. Gregory. — Palaeontology.
1 Gr., 5 Sc. Total 6.

15. Asst. Professor R. T. Jackson. Occasional Lectures by Professor Shaler.— Historical Geology. 1 Sc. Total 1.

18 ^{1}*hf*. Professor H. L. Smyth, assisted by Mr. Fox. — Economic Geology. Non-metalliferous products and water supply. 1 Se., 1 So., 5 Sc. Total 7.

Primarily for Graduates: —

Courses of Research.

‡20. Professor Davis. — Physiography (advanced course).
5 Gr., 1 Sc., 1 R. Total 7.

21. Professor H. L. Smyth. — Mining Geology (advanced course).
1 Gr., 2 Sc. Total 3.

23. Professors Shaler, Davis, Wolff, and H. L. Smyth, Asst. Professors J. B. Woodworth, and Jaggar. — Geological Investigation in the Field and Laboratory. 5 Gr., 2 Sc. Total 7.

26. Asst. Professor Ward. — Climatology (advanced course). 1 Gr. Total 1.

MINERALOGY AND PETROGRAPHY.

Primarily for Undergraduates: —

2. Asst. Professor **Palache**, assisted by Mr. **Wood**. — Mineralogy.
2 Gr., 4 Se., 4 Ju., 6 So., 1 Fr., 41 Sc. Total 58.

For Undergraduates and Graduates: —

12. Professor **Wolff**, assisted by Mr. **Wood**. — Petrography.
6 Gr., 1 Se., 2 Sc. Total 9.

Primarily for Graduates: —

COURSE OF RESEARCH.

‡20. Professor **Wolff** and Asst. Professor **Palache**. — Mineralogical and Petrographical Research. 1 Gr. Total 1.

MINING AND METALLURGY.

Primarily for Undergraduates: —

1 ^{2}*hf.* Professor H. L. **Smyth**, assisted by Mr. **Fox**. — Mining. Prospecting and exploring; sampling and the principles of exploitation.
1 Gr., 2 Se., 1 Ju., 2 So., 25 Sc. Total 31.

9 ^{2}*hf.* Asst. Professor **Sauveur**. — General Metallurgy.
1 Gr., 7 Se., 10 Ju., 8 So., 45 Sc. Total 71.

10 ^{1}*hf.* Mr. **Raymer**, assisted by Mr. **Curtis**. — Fire Assaying.
2 Gr., 2 Se., 1 Ju., 24 Sc. Total 29.

For Undergraduates and Graduates: —

2 ^{1}*hf.* Asst. Professor **Sauveur**, assisted by Mr. **Boynton**. — Metallurgy of iron and steel. 6 Gr., 3 Se., 47 Sc. Total 56.

3 ^{2}*hf.* Professor H. L. **Smyth**. — Metallurgy of copper, nickel, lead, zinc, and the minor metals. 2 Gr., 16 Sc. Total 18.

4. Mr. **Raymer**, assisted by Mr. **Curtis**. — Ore-dressing, Concentration, and Milling. 3 Gr., 7 Sc. Total 10.

5 ^{1}*hf.* Professor H. L. **Smyth**. — Mining. Metal and coal mining; exploitation.
2 Gr., 11 Sc. Total 13.

11 ^{2}*hf.* Mr. **Raymer**. — Mining Plant. 4 Gr., 6 Sc. Total 10.

6 ^{2}*hf.* Mr. C. H. **White**, assisted by Mr. **Boylston**. — Metallurgical Chemistry.
1 Se., 1 Ju., 19 Sc. Total 21.

7. Mr. C. H. **White**, assisted by Mr. **Boylston**. — Metallurgical Chemistry (advanced course). 1 Gr., 1 Se., 1 Sc. Total 3.

8 ^{1}*hf.* Mr. C. H. **White**. — Leaching Processes for Gold and Silver Ores.
3 Gr., 4 Sc. Total 7.

12. Mr. P. S. **Smith**. — Mining. The study of mining operations.
1 Ju., 11 Sc. Total 12.

14 ^{2}*hf.* Asst. Professor **Sauveur**, assisted by Mr. **Boynton**. — Metallography.
2 Gr., 1 Se., 1 Sc. Total 4.

17 ^{2}*hf.* Mr. **Raymer**. — Mine Surveying. The general principles of underground and claim surveying. The construction of maps, sections, and models.
11 Sc. Total 11.

Primarily for Graduates: —

COURSE OF RESEARCH.

20. Asst. Professor **Sauveur**. — Metallography and the Physics of Metals.
2 Gr., 1 Sc. Total 3.

Anthropology.

For Undergraduates and Graduates: —

1. Dr. **Farabee**. — General Anthropology.
2 Gr., 13 Se., 10 Ju., 12 So., 2 Fr., 2 Sp., 7 Sc., 1 Di. Total 49.

5. Dr. **Dixon**. — American Archaeology and Ethnology.
1 Gr., 6 Se., 10 Ju., 15 So., 3 Fr., 1 Sp., 1 Sc. Total 37.

Primarily for Graduates: —

‡2 ^{2}*hf.* Dr. **Farabee**. — Somatology. 1 Se., 2 Ju., 1 Sc. Total 4.

7 ^{2}*hf.* Dr. **Dixon**. — Ethnology of Polynesia and Australia.
5 Se., 5 Ju., 2 So., 2 Sc. Total 14.

‡8 ^{2}*hf.* Dr. **Dixon**. — American Indian Languages. Discussion and study of selected texts. 1 Ju., 1 Di. Total 2.

Anatomy, Physiology, and Hygiene.

1. Drs. **Darling**, **Provandie**, **Bacon**, and **Hapgood** — Elementary Anatomy and Physiology. Personal Hygiene. Emergencies.
5 Se., 29 Ju., 29 So., 6 Fr., 4 Sp., 14 Sc. Total 87.

In accordance with a vote of the President and Fellows whereby the Faculty may, under certain conditions, authorize a Doctor of Philosophy or a Doctor of Science to give instruction gratuitously or for such fees as he may himself collect, Dr. Alexander Petrunkévitch was authorized to give, in the second half-year, a course of lectures on Cytology, and Dr. K. D. Jessen was authorized to give, in the second half-year, twelve lectures on German Literary and Aesthetic Criticism during the Eighteenth Century.

It will be observed that certain summer work in Philosophy and Psychology might be counted in 1904 toward the degree of A.B. or of S.B. The total amount in either subject could not exceed a half-course; and the work for a half-course in either subject consisted of the two summer courses therein. The opportunity of counting summer philosophy toward a degree will therefore appeal to none but serious students, for whom, and for whom only, the Summer School is designed.

Summer Courses of Instruction, 1904.

The following courses (fifty-eight as compared with seventy-two in 1903) were given, under the direction of the Faculty, in the summer of 1904. The abbreviations, with the addition of S.S. for "member of the Summer School," are the same as those in the preceding list. A hand ☞ points to each course that may be counted toward a degree: —

Greek.

A. Professor Glanville Terrell. — Greek for Beginners. 5 times a week, for 6 weeks. 4 S. S. Total 4.

Classical Archaeology.

Dr. O. S. Tonks. — Greek Vase Painting. 5 times a week, for 6 weeks. 2 S. S. Total 2.

Latin.

A. Dr. Baker. — General Course for Teachers. 5 times a week, for 6 weeks. 19 S. S. Total 19.

B. Dr. Rand. — The Life and Works of Ovid. 5 times a week, for 6 weeks. 3 S. S. Total 3.

English.

A. Mr. P. G. Carleton. — English Composition (elementary course). 5 times a week, for 6 weeks. 44 S. S. Total 44.

B. Mr. Greenough. — English Composition (advanced course). 5 times a week, for 6 weeks. 1 R., 25 S. S. Total 26.

C. Mr. Rideout. — English Composition (second advanced course). 5 times a week, for 6 weeks. 1 So., 12 S. S. Total 13.

Mr. Reynolds. — College Admission Requirements in English. 5 times a week, for 6 weeks. 55 S. S. Total 55.

Dr. P. C. Hoyt. — Anglo-Saxon. Anglo-Saxon Reader and Grammar. 5 times a week, for six weeks. 1 S. S. Total 1.

Dr C. F. Brown. — English Literature in Outline, from Anglo-Saxon Times to the Present. 5 times a week, for 6 weeks. 2 S. S. Total 2.

Mr. Copeland. — English Literature of the Eighteenth Century. 5 times a week, for 6 weeks. 13 S. S. Total 13.

Mr. H. M. Rideout. — English Literature of the Nineteenth Century, from the publication of the Lyrical Ballads to the death of Tennyson. 5 times a week, for 6 weeks. 36 S. S. Total 36.

Mr. Copeland. — English and American Biography. 5 times a week, for 6 weeks. 12 S. S. Total 12.

Mr. Greenough. — The Literary History of America. 5 times a week, for 6 weeks. 7 S. S. Total 7.

A. Mr. Willard. — Development of the Voice. 5 times a week, for 6 weeks. 1 Se., 11 S. S. Total 12.

B. Professor WINTER and Mr. HILLS. — Platform Reading and Oral Discussion. 5 times a week, for 6 weeks. 12 S. S. Total 12.

C. Professor WINTER and Mr. HILLS. — Platform speaking. 5 times a week, for 6 weeks. 1 Se., 1 Ju., 5 S. S. Total 7.

German.

A. Mr. GROSSMANN. — Composition and Conversation; Methods of Teaching German. 5 times a week, for 6 weeks. 15 S. S. Total 15.

French.

A. Mr. SNOW. — Intermediate French Course for Teachers. 5 times a week, for 6 weeks. 16 S. S. Total 16.

Spanish.

A. Asst. Professor FORD. — Introductory Course. 5 times a week, for 6 weeks. 1 Sc., 7 S. S. Total 8.

History.

A. Dr. EDMISTON. — Greek History. 5 times a week, for 6 weeks. 8 S. S. Total 8.

B. Professor FAY (Dartmouth Coll.). — Modern European History. 5 times a week, for 6 weeks. 8 S. S. Total 8.

C. Professor A. L. CROSS (Univ. of Michigan). — English History. 28 lectures, supplemented by written exercises. 5 times a week, for 6 weeks. 6 S. S. Total 6.

D. Professor MACDONALD (Brown Univ.). — American History. Lectures and training in the use of materials, and in the application of the laboratory method of study. 25 lectures, supplemented by 4 pieces of written work. 5 times a week, for 6 weeks. 1 Gr., 26 S. S. Total 27.

Psychology.

☞ *A.* Dr. YERKES. — Lecture Course: The Principles, Methods, and Applications of Psychology. 5 times a week, for 6 weeks. 2 Sc., 9 S. S. Total 11.

☞ *B.* Dr. YERKES. — Laboratory Course: An Experimental Study of Sensation, Perception, Attention, and Reaction, with Demonstrations. 5 times a week, for 6 weeks. 2 Sc., 9 S. S. Total 11.

Philosophy.

☞ Professor ROYCE. — General Introduction to Philosophy. 5 times a week, for 6 weeks. 3 Ju., 3 So., 1 R., 24 S. S. Total 31.

☞ Professor ROYCE. — General History of Philosophy. 5 times a week, for 6 weeks. 3 Ju., 3 So., 1 R., 22 S. S. Total 29.

Education.

S1. Mr. A. O. NORTON. — The History of Education since the Twelfth Century. 5 times a week, for 6 weeks. 12 S. S. Total 12.

S2. Mr. A. O. NORTON. — General Principles of Education, courses of study, etc. 5 times a week, for 6 weeks. 1 Se., 34 S. S. Total 35.

S3. Mr. G. I. ALDRICH. — Organization and Administration of Schools and School Systems. 5 times a week, for 6 weeks. 16 S. S. Total 16.

Drawing and Painting.

Dr. Ross and Mr. W. L. Mowll. — Lectures, with technical exercises for teachers of drawing and painting, and for professional painters. 3 times a week, for 6 weeks. 1 Gr., 60 S. S. Total 61.

Architectural Drawing.

Mr. Swan. — Architectural Drawing. Theory and Practice. 5 times a week, for 6 weeks. 2 Sc., 2 Ju., 4 S. S. Total 8.

Architectural Design.

Mr. W. L. Mowll. — Theory and Practice. 5 times a week, for 6 weeks. 3 Sc. Total 3.

Music.

I. Mr. H. L. Stone. — Grammar of Music and Laws of Musical Construction. 5 times a week, for 6 weeks. 4 S. S. Total 4.

Mathematics.

☞ SD. Asst. Professor Love. — Advanced Algebra. 5 times a week, for 6 weeks. 1 Gr., 1 Se., 2 Ju., 4 So., 3 Fr., 3 Sc., 11 S. S. Total 25.

☞ SE. Dr. Huntington. — Solid Geometry. 5 times a week, for 6 weeks. 1 Gr., 1 Se., 4 Ju., 1 So., 1 Fr., 4 Sc., 5 S. S. Total 17.

☞ SA. Asst. Professor Bouton. — Plane Trigonometry. 5 times a week, for 6 weeks. 1 Se., 1 Ju., 9 So., 6 Fr., 4 Sc., 4 S. S. Total 25.

☞ SB. Asst. Professor Bouton. — Plane Analytic Geometry. 5 times a week, for 6 weeks. 3 Ju., 1 So., 1 Fr., 9 Sc., 3 S. S. Total 17.

S 2. Dr. Huntington. — Differential and Integral Calculus. 5 times a week, for 6 weeks. 5 Sc., 8 S. S. Total 13.

Physics.

B. Professor W. E. McElfresh and Mr. L. D. Hill. — Elementary Experimental Physics. 5 times a week, for 6 weeks. 1 Se., 1 Fr., 24 S. S. Total 26.

☞ *C.* Dr. H. W. Morse. — College Course in Experimental Physics. 5 times a week, for 6 weeks. 1 Sc., 1 R., 7 S. S. Total 9.

Chemistry.

Dr. Baxter, assisted by Mr. M. A. Hines. — Elementary Chemistry. 5 times a week, for 6 weeks. 12 S. S. Total 12.

Mr. R. C. Wells. — Physical Chemistry. 5 times a week, for 6 weeks. 7 S. S. Total 7.

Dr. Baxter, assisted by Messrs. R. C. Wells and A. B. Lamb. — Qualitative Analysis. 5 times a week, for 6 weeks. 13 S. S. Total 13.

Botany.

☞ S1. Mr. R. G. Leavitt, assisted by Mr. J. R. Johnston. — Introductory Course: Elementary Morphological, Physiological, and Œcological Botany. 5 times a week, for 6 weeks. 1 Se., 3 Ju., 5 So., 4 Fr., 1 Sp., 1 Sc., 1 R., 11 S. S. Total 27.

☞ S2. Mr. A. B. Plowman. — Advanced Course: Morphology, Histology and Œcology of Flowering Plants. 5 times a week, for 6 weeks.
1 S. S. Total 1.

Mr. J. R. Johnston. — Morphology and Development of Cryptogams. 5 times a week, for 6 weeks. 1 S. S. Total 1.

Geology.

☞ S1. Professor Shaler and Professor J. E. Woodman. — Elementary course. Lectures, laboratory, and field work. 5 times a week, for 6 weeks.
1 Ju., 2 So., 1 Fr., 3 Sc., 1 R., 9 S. S. Total 17.

Geography.

☞ Mr. H. T. Burr, assisted by Mr. F. M. Wilder. — Lectures, laboratory, and field work. 5 times a week, for 6 weeks.
1 Se., 1 Ju., 3 So., 3 Fr., 1 Sc., 1 R., 12 S. S. Total 22.

Commercial Geography.

Dr. C. A. Herrick. — Lectures, recitations, demonstration of methods, and excursions. General Course for Teachers. 5 times a week, for 6 weeks.
6 S. S. Total 6.

Physical Education.

Dr. Sargent and assistants. — Elementary and advanced courses in theory. 5 weeks. 1 Ju., 54 S. S. Total 55.

Dr. Sargent and assistants. — Elementary and advanced courses in practice. 5 weeks. 2 Ju., 131 S. S. Total 133.

The following courses were given in the summer as part of the regular instruction of the Lawrence Scientific School. Some of these courses were given at Squam Lake, New Hampshire: —

Engineering.

4*a*. Asst. Professor Hughes. — Plane Surveying. Field work. Daily, 6 weeks.
2 Gr., 1 Se., 23 Ju., 29 So., 11 Fr., 1 Sp., 46 Sc., 5 S. S. Total 118.

4*d*. Asst. Professor Hughes. — Railroad Surveying. Daily, 3 weeks.
2 Gr., 2 Se., 15 Ju., 20 So., 5 Fr., 1 Sp., 46 Sc., 5 S. S. Total 96.

4*c*. Asst. Professor Hughes. — Geodetic Surveying. Daily, 2 weeks.
1 Se., 15 Ju., 20 So., 5 Fr., 1 Sp., 38 Sc., 6 S. S. Total 86.

10*a*. Asst. Professor Burke, assisted by Mr. E. R. Markham. — Chipping, filing, and fitting. 90 hours.
2 Gr., 1 Ju., 2 So., 17 Sc., 3 S. S. Total 25.

10*b*. Asst. Professor Burke, assisted by Mr. E. R. Markham. — Blacksmithing. 90 hours. 3 Gr., 1 Ju., 2 So., 17 Sc., 2 S. S. Total 25.

10*c*. Asst. Professor Burke, assisted by Mr. E. R. Markham. — Pattern Making, etc. 90 hours. 2 Gr., 1 Ju., 18 Sc., 3 S. S. Total 24.

10*e*. Asst. Professor Burke, assisted by Mr. E. R. Markham. — Machine-Shop Practice. 90 hours. 2 Gr., 1 Ju., 19 Sc., 3 S. S. Total 25.

The Engineering Camp at Squam Lake has proved highly successful: the students work, and learn much — including the important truth that, even in summer, a vigorous life may be as happy as a lazy one.

For the first time the Faculty offered courses in Forestry: Mr. Fisher instructed twenty-eight students in Silviculture, Mr. Jack eighteen in Forest Measurements and thirteen in Forest Botany. Moreover, a four years' programme in preparation for the profession of Forestry was devised in the Lawrence Scientific School. Since Forestry is a subject for which the University has in the Arnold Arboretum peculiar facilities, and is, besides, a subject of great and growing importance, the establishment of courses in Forestry last year and the increase in their number this year are matters of congratulation. As yet, however, the University has made merely a beginning. Such a school of Forestry as it might and should have would require more teachers and more money.

One marked difference between Forestry at Harvard University and Forestry at other large universities is in the students who study it. Instead of limiting the courses to graduates we design them for undergraduates; and though we thus gain the opportunity of interesting the student early, we run the risk of dealing with him while he is immature. To the youthful mind the name Forestry is sometimes falsely seductive. It suggests a charming out of door life vaguely associated with hunting, fishing, and other sylvan sport — something quite different from mathematical computation of the amount of timber in felled or standing trees. The profession of a forester, though it has its aesthetic side, is difficult and commercial, a profession that preserves forests for economical and lasting use and only incidentally for beauty. By limiting to Scientific Students the courses in Forestry — so far as they are counted for a degree — and by uniting them in a four years' programme with other courses known to be difficult, the University does what it can to clear the minds of undergraduates who are considering the choice of Forestry as a genteel and easy profession for people who like to camp out in the woods.

THE LARGE LECTURE COURSES.

The splitting of History 1, referred to below, resulted in a shrinkage from four hundred and eight students in the History 1 of 1902–03 to three hundred and forty-six students in the History 1*b* of 1903–04; but the course was still too large for the comfort and for the complete efficiency of any teacher who met all the members at once in the lecture room. Other enormous courses were Government 1 with three hundred and seventy-six students, Geology 4 with four hundred and eighty-nine, and Economics 1 with five hundred and twenty-nine. The last named course was the largest elective course in the University. Even English *A*, the course prescribed for Freshmen and First-Year Scientific Students, contained but seventy-three more persons; and in English *A* no instructor met the whole class at once.

In my judgment the large lecture courses, though often conducted with remarkable skill, are seldom thoroughly efficient. Their hope lies in the provision of a satisfactory number of competent assistants who shall meet the students every week and test them, and shall counteract the evil effect of "self-tutoring" notes and other royal roads to examination learning. This is the method at which some of the lecture courses now aim; there is, however, great difficulty in getting enough satisfactory assistance for the price paid by the University.

The varied constituency of the large courses is worth consideration. Geology 4 contained Graduates, Seniors, Juniors, Sophomores, Freshmen, Special Students in the College, Scientific Students doubtless registered in divers ways, Medical Students, students from the Bussey Institution, and one Divinity Student.

Instruction provided for 1904–05.

In 1904–05, Mr. Lythgoe, a new instructor, offers courses in Egyptian Art and Archaeology. The Department of the Classics makes, as usual, a strong and varied offering, especially in subjects suitable for graduates. The Department of English, though it suffers severely from the loss or the absence of certain excellent teachers and from retrenchment in the number of its assistants, still offers many attractive courses, and some of great strength. With the promotion of Mr. I. L. Winter to an assistant professorship of Elocution, the half-course English 10 has been divided into several half-courses under the name of "Public Speaking." Each of these half-courses deals specifically with one part of the general subject formerly treated in English 10; and not more than one of them may be counted by any one student toward a degree. The Department of German, though feeling heavy losses among its best teachers, has made up for these losses to some extent. In Comparative Literature the loss of Assistant Professor Fletcher has seriously cut into the work. In Slavic two new half-courses are offered, primarily for graduates. In History the introductory course long known as History 1 was split a year ago into Modern European History

(History 1*b*) and Mediaeval History (History 1*a*). History 1*b* was first given in 1903–04, by Assistant Professor Coolidge, who had conducted History 1; History 1*a* is first given in 1904–05, by Professor Haskins. Assistant Professor Coolidge thus relieved, for this year, of an introductory course, offers two new half-courses in the Expansion of Europe since 1815; Dr. Merriman conducts a new course in European History of the sixteenth and seventeenth centuries; Mr. Johnston a new course in the History of Italy from 1789 to 1870, and Professor Channing a new half-course in Selected Topics in the Historical Development of American Institutions. In Government, since the income of a new professorship has become available, the offering is stronger than it was a year ago; and this study, which was formerly merged in History, has rapidly grown into a subject of the first importance: Professor Lowell's introductory course, by no means conspicuously easy, is one of the largest courses in the University. Economics maintains in 1904–05 the strength of its offering in 1903–04. Among the new courses in Philosophy should be noted a course under Dr. Brackett in Practical Problems of Charity, Public Aid and Correction. Courses in Education suffer temporarily from the absence of Professor Hanus in his sabbatical year; but the more important courses, including the seminary, are maintained. In Fine Arts the courses are still lamentably few. In Architecture, a well endowed Department, the offering is more nearly what it should be. Landscape Architecture is a young and vigorous subject, which promises to become more and more important. Forestry, another new subject, has increased its offering. Instruction in Music would be materially aided by a building worthy of the skill and the enthusiasm of the Department, which for obvious reasons needs a home of its own somewhat isolated from rooms that are used for general purposes; the courses in Music are substantially the same as they were last year. In Mathematics every instructor is of Faculty rank; and the offering, always excellent, is somewhat more excellent this year than in 1903–04. Among the new courses is a half-course in the Fundamental Concepts of Mathematics, conducted by Dr. E. V. Huntington; this course bids fair to be of exceptional interest to students of Philosophy.

On the whole, the instruction offered under the Faculty of Arts and Sciences has weathered the financial disaster of the preceding year with remarkable success. Outside of the Departments of English and German, wherein retrenchment has been sharpest, the deficits of 1902–04 have in most cases been felt not as a cause of contraction but rather as a preventive of expansion. Every healthy department of study tends to grow, and consequently to cost more; and every aggressive department resents a check to its growth.

In the announcement of instruction for 1904–05 one half-course that had proved dangerously easy was abandoned, and of one whole course and one half-course that had suffered from the same cause the latter was announced as no longer to be counted for the degree of A.B., the former as no longer to be counted for any degree. The soft courses, as they are called, are frequently among the most stimulating, if they are not clogged with students who take them for their softness. It is well therefore that they should be given, and well that in the fulfilment of requirements for a degree they should be counted lightly or not at all.

HARVARD COLLEGE AND THE COLLEGE ENTRANCE EXAMINATION BOARD.

In my last report I expressed a hope that a working relation might be established between Harvard College and the College Entrance Examination Board. In the course of the academic year, the Dean of Harvard College, as chairman of the Committee on Admission Examinations, learned from the various Departments represented in that committee whether, in their respective subjects, the latest examination papers of the Board might serve as sufficient tests for admission to Harvard College. It appeared that in most of the Departments these papers, even when not altogether pleasing to the Harvard examiners, would give sufficient evidence for the admission or rejection of a candidate in the subjects concerned. When the Committee on Admission Examinations had made sure of this fact, it presented to the Faculty, on May 3, the following recommendation:

> "Whereas, the Committee desires to work in harmony with the College Entrance Examination Board, *Voted*, to recommend to the Faculty that a committee of the Faculty be appointed to confer with the Board at its meeting, May 7, to discuss the possibility of establishing closer relations with that Board."

The motion was adopted; the Dean of the Faculty, the Dean of Harvard College, and Professor H. S. White were appointed as a committee.

Receiving assurance of a cordial welcome, this committee attended not only the meeting of the Board but the preliminary meeting of the executive committee of the Board. President Butler extended to the Harvard delegates every courtesy and gave them all possible information about the methods and the results of work in the Board. The Harvard committee reported unanimously that the University might wisely apply for membership in the Board; on May 17 the Faculty, by a vote of forty-four to seven, decided to apply; and in June Harvard University, by a unanimous vote of the Board, became a member. Already one or two of its officers held positions of trust under the Board; and the number of such persons was immediately increased. It remains for the Faculty to decide what papers of the Board shall be accepted as equivalent to Harvard papers, and whether examination books shall be read by Harvard examiners after they have been read by the examiners of the Board. If they are not read by Harvard examiners, it remains for the Faculty to decide what percentage shall allow a candidate to pass in each subject.

This new alliance, though its full significance cannot yet be judged, bids fair to help Harvard College, the College Entrance Examination Board, and all secondary schools.

GENERAL SCIENCE IN THE LAWRENCE SCIENTIFIC SCHOOL.

In December, 1903, the Faculty adopted regulations to strengthen the work of students in General Science at the Lawrence Scientific School. When the requirements for admission were much lower in the Lawrence Scientific School than in Harvard College, a good many persons by no means scientific seized the opportunity of early tenure in the University, and, having registered themselves as students in General Science, were permitted, after a rather solid first year, to exercise great freedom in the choice of studies. As the President of the University and the Dean of the School pointed out, these persons did not belong in the Scientific School. All the science they wanted — and a great deal more — they might have had as members of Harvard College, if they could have got into that institution. Being neither scientific nor students they were not properly Scientific Students; and having entered the University ill-prepared, they tended to lower the standard of work in such courses as they undertook. With the strengthening of the admission requirements in the Lawrence Scientific School, there is no reason why the students in General Science should remain, as a body, inferior persons; and with the new regulations imposed on their work they become Scientific Students in fact as well as in name.

SOME EFFECTS OF THE REVISED REQUIREMENTS FOR THE DEGREE OF A.M. ON STUDENTS FROM OTHER UNIVERSITIES AND COLLEGES.

The revised requirements for the degree of A.M., which were stated in my last report and discussed in the last report of the Dean of the Graduate School, tend to increase the number of students in the Graduate School at the expense of the number in Harvard College. Formerly, many graduates of colleges which admit persons as Freshmen a year before Harvard College would admit them entered Harvard College as Seniors. Now such persons naturally enter the Graduate School; and if their work is advanced enough and well done, they may take the Master's degree in one year. Since undergraduates of such colleges are rarely admitted to Harvard College *ad eundem*, and, if allowed to take the Harvard A.B. as early as they would take the A.B. of their own colleges, are required to do a good deal of extra work, the able student with Harvard yearnings is now tempted to still those yearnings until after graduation. This state of things cannot but affect the recruiting of all the classes in Harvard College to which students from other colleges are transferred.

The transference of students from other colleges has, in recent years, given rise to a new kind of Special Student. If an applicant from another college has been in it but a year, or if he comes from a college whose standards are unknown or whose work is not readily translatable into Harvard terms, he is registered as a Special Student until at least a year of Harvard work has shown to what Harvard class he may be safely transferred. This suspension of judgment has proved good for all persons concerned except applicants for pecuniary aid. Persons who, if admitted to regular standing, would be eligible for Price Greenleaf money, are as Special Students ineligible; and the amount of pecuniary aid available for Special Students is small.

DEGREES CONFERRED IN THE MIDDLE OF THE ACADEMIC YEAR.

In March the Faculty made for the first time recommendations for Mid-Year degrees; and the governing boards conferred, without ceremony, the Bachelor's degree on seven candidates in Arts and three in Science. Such candidates are of two sorts — persons half a year ahead of their original classes, and persons half a year or more behind.

THE DEGREES OF MINING ENGINEER AND METALLURGICAL ENGINEER.

In March the Administrative Board of the Lawrence Scientific School recommended: —

"That the Faculty be asked to request the President and Fellows of Harvard College to institute the degrees of Mining Engineer (M.E.) and Metallurgical Engineer (Met. E.) to be given to Bachelors of Science in Mining and Metallurgy of Harvard University, or to holders of an equivalent degree, on the completion of one year of prescribed study to be approved by the Faculty of Arts and Sciences as affording a suitable preparation for these degrees."

The recommendation was adopted; and the new degrees were established by vote of the governing boards.

PROCEEDINGS AGAINST THE A.B. FOR WORK DONE IN THE GRADUATE SCHOOL, AND THE A.M. FOR WORK DONE IN HARVARD COLLEGE.

In April, 1903, the Faculty voted to recommend no one for the degree of A.B. (after that year) on the strength of work done in the Graduate School. In May, 1904, the converse proposition to recommend no one for the degree of A.M. on the strength of work done in Harvard College was referred to the Administrative Boards of the Graduate School and Harvard College for consideration and report. These Boards agreed in proposing a modification of the proposition of May, 1904; but their report was not made until June 21, and not adopted till the present academic year. The vote of April, 1903, and the proposition of May, 1904, aimed at a requirement of clean edges in the work for each degree and at the abolition of the "consolation A.B." for Graduate Students and the "postponed A.M." for persons who have never been Graduate Students. The "consolation A.B." I discussed in my last report. The "postponed A.M." is taken by two kinds of persons: (*a*) those who complete the work for the A.B. in three years but, preferring to take the A.B. at the end of the fourth year with their classmates, devote the fourth year, as Seniors in Harvard College, to work which entitles them to the A.M. at the end of a fifth year, without residence or study after the fourth; (*b*) those who almost complete the work for the A.B. in three years and do in the fourth year the remaining portion plus such work as is done by those described under (*a*).

The question of the "postponed A.M." is involved with the question of scholarships, since a Senior has hitherto been allowed to hold an undergraduate scholarship when all his undergraduate work is done and he is working for the Master's degree under the direction of the Graduate School, of which he is not a member.

THE COMMITTEE ON IMPROVING INSTRUCTION IN HARVARD COLLEGE.

At the end of my last report I touched briefly on the conclusions reached by the Committee on Improving Instruction in Harvard College, which committee, after more than a year of investigation and deliberation, made, in the autumn of 1903, a report to the Faculty. Of this report, which was printed entire in the *Harvard Graduates' Magazine*, the chief conclusions were as follows:

"1. The relation between the instructors and the students is good, and the students are in general satisfied with their elective studies.

"2. The average amount of study, however, is discreditably small.

"3. The difficulty of raising the standard is seriously increased by students taking six courses each.

"4. The requirements of time and study in the various courses should be as nearly equivalent as possible. Certainly there should not be such discrepancies as exist at present.

"5. Large lecture courses have come to stay.

"6. Yet in the large lecture courses a special effort should be made to increase the amount and the thoroughness of the work.

"7. For this purpose the number of assistants should be increased.

"8. Every effort should be made to secure such a number and such an apportionment of lecture rooms as shall enable the instructor to use his lecture room before and after the hour of his lecture.

"9. It is a mistake to prescribe introductory lecture courses as a preliminary to all further study of the subjects that they treat.

"10. Every subject in the college should be taught on the principle that a thofough knowledge of it is a valuable part of a liberal education.

"11. Every serious man with health and ability should be encouraged to take honors in some subject."

The Committee, in its investigation, had questioned students as well as instructors; and in the seventeen hundred and fifty-seven replies of students it received information about the various courses of instruction from the point of view of the instructed. This information was gathered in a way that insured its freedom from either flattery or fear, and is believed by every member of the Committee to be invaluable. It shows, as might have been foreseen, a generally admirable relation between student and instructor, and gives criticism which is frank, alert, and appreciative. Most of the suggestions offered by students were worth thinking about; and some were put to immediate use. These replies from students confirmed the Committee in its conviction that acquaintance with methods of instruction involves acquaintance with those methods as seen and felt by the persons to whom they are applied.

Out of the report of the Committee sprang divers motions whereof some were referred at the end of the year to another committee, which has recently reported, and one, made in January by Professor Morgan, was referred to a large new committee, which reported in March. Professor Morgan's motion was

"(*a*) That in the opinion of the Faculty every undergraduate of superior ability should look to a considerable amount of advanced work in some subject or group of related subjects as a natural part of his undergraduate career.

"(*b*) That it is desirable to appoint a committee to prepare and report a plan under which the degree of A.B. *magna* and *summa cum laude* shall in future be given only to students who have taken a considerable amount of advanced work in some subject or group of related subjects, and that the committee consider the advisability of adopting a plan by which candidates for honors may be relieved from taking examinations in their elective courses during the last year of candidacy for honors."

On the recommendation of the Committee the Faculty adopted the following scheme: —

"BACHELOR OF ARTS WITH DISTINCTION.

"1. The Degree of Bachelor of Arts with Distinction is awarded in two grades, *cum laude* and *magna cum laude*.

"2. *Cum laude* on General Studies. A candidate is recommended for the degree *cum laude* who has obtained grade A or B in nine elective courses, but courses regularly open to Freshmen to count for this purpose only as half-courses. He must have obtained a grade above D in at least two-thirds of his remaining work, that being the standard now required for the degree without distinction.

"3. *Cum laude* on a Subject or Related Subjects. A candidate is recommended for the degree *cum laude* who has completed a considerable amount of advanced work in some subject or related subjects, and who has been recommended on the ground of this work to the Faculty by a Division or a Department, or by a Special Committee* appointed by the Faculty for this purpose. He must have obtained a grade above D in at least two-thirds of his remaining work, that being the standard now required for the degree without distinction.

---

* E. g., the Committee on Honors in Literature, which may well recommend a candidate on studies in related subjects.

"4. *Magna cum laude.* A candidate otherwise qualified for the degree *cum laude* on a subject or related subjects is recommended for the degree *magna cum laude* who has been recommended to the Faculty for this degree by a Division or a Department or by a Special Committee on the ground of high distinction.

"5. The subject or related subjects in which the degrees *cum* and *magna cum laude* are conferred under sections three and four will be mentioned in the diploma and on the Commencement Programme.

"6. A candidate who fails of recommendation for the degrees mentioned under sections three and four may receive the degree without distinction on the recommendation of the Division, Department, or Committee concerned.

"7. The various Divisions, or, if the Division prefers, a Department forming a part of a Division, shall formulate for publication, and submit to the Faculty for its approval, general provisions under which they will be prepared to recommend candidates for the degrees with distinction to the Faculty. In forming plans, a Division or Department should base them on an amount of work about equivalent to but not exceeding half the time devoted to elective work in College, and should feel free to include in their plans related courses under the direction of other Divisions or Departments.

"8. The test employed by a Division or Department or Special Committee to decide its recommendation for the degree *magna cum laude* should, so far as possible, be not of a different character from that of the test employed in the case of the degree *cum laude*, but the recommendation should be made upon evidence of high distinction in the manner in which the candidate deals with that test.

"9. A student intending to become a candidate for a degree with distinction on a subject or related subjects will record his name at the office of the Dean of Harvard College. This he may do as early as the beginning of his Sophomore year, or at any time not later than November 1st of the academic year in which he expects to receive the degree; but a Division, Department, or Special Committee may fix as the latest date in its own case a time earlier than November 1st of that year.

"10. A student who records himself as intending to become a candidate for the degree with distinction on a subject or related subjects is entitled to have his name placed upon a List at the beginning of his Sophomore year, providing he has not fallen below C during his Freshman year, or at any later time when he has satisfied the Dean of Harvard College that he is fit to have his name placed upon the List; and any student who has been in one of the first two groups of scholarship holders during any year is entitled to have his name placed upon the List during the succeeding year. The name of any student may be withdrawn from the List at any time on recommendation of the Department under which he is working, or by the Dean after consultation with that Department, if the student fails to obtain or maintain after being entered on the List a standard of scholarship and conduct satisfactory to the Dean.

"11. Students whose names are on the List will, except for registration, be trusted by the Dean with greater responsibility and discretion in the ordering of their College work, so far as this does not interfere with the collective interests of the classes or sections to which they belong, and will be excused during their last year in College from examinations in courses belonging to their subject or related subjects, in case the Division or Department under which they are working has provided some other public test than those examinations as the ground for its recommendation."

As a result of these votes, the several Departments proposed terms of Departmental distinction analogous to the present Honors but designed to be more widely attractive. Their proposals, as condensed, tabulated, and presented to the Faculty, seemed to some members of that body too divergent to be safe; and these persons, together with those who had been or began to be sceptical about other results of the Committee's report, made a majority which prevented the Faculty from putting into immediate practice the scheme adopted on the recommendation of the Committee. The scheme still stands; but another committee, of which the Dean of Harvard College is chairman, is at work on the application of it in detail.

THE CELEBRATION OF THE PRESIDENT'S BIRTHDAY.

From the records of the Faculty I take the story of the most memorable meeting in the year:—

"On February 2, when the President left the Faculty meeting early, the Faculty took the opportunity of appointing a committee on the celebration of his birthday, March 20. On February 11, when the President was in New York, the Faculty had a special meeting, at which the Dean reported that Mrs. Eliot had been consulted, that the Faculty might have a few minutes of the President's time in the afternoon of March 20, and that the committee had in mind a piece of silver as an appropriate gift. The Faculty then appointed the Dean, Professor Lowell, and Professor Willson, as a committee with full power.

"On Sunday, March 20, at three o'clock, the 'members' of the Faculty met in the Faculty Room; and the President, at the request of Mrs. Eliot, came a few minutes later. Mrs. Eliot, summoned that day by the committee, came with him. At what is believed to be the largest meeting in the history of the Faculty, the President received a silver cup modelled on a Greek vase or cup of the fifth century B.C. On the cup was an inscription written by Professor Hill: —

"'Charles William Eliot, President of Harvard University, from the Faculty of Arts and Sciences, March 20, 1904, in grateful acknowledgment of his devotion to the University for thirty-five years, and of his passion for justice, for progress, and for truth.'"

The Faculty of Arts and Sciences is made up of singularly independent men. Its members are chosen without reference to their probable agreement or disagreement of opinion with each other or with anybody else. Many of them are strongly opposed to much that the President holds dear in education, in the policy of the Faculty, in a hundred other things, and speak out their opposition as part of their loyalty to themselves, to the University, and to him. It was natural therefore that every member of the Faculty who was within reach should join in honoring a leader who teaches freedom.

L. B. R. BRIGGS, *Dean.*

THE COLLEGE.

To the President of the University: —

Sir, — I have the honor to submit to you a report on the condition of Harvard College for the academic year 1903–04.

The total number of students at the beginning of November, 1904, was two thousand and seventy-three, divided as follows: —

Seniors	325
Juniors	425
Sophomores	630
Freshmen	556
Total number of Undergraduates	1936
Special Students	137
Total	2073

Compared with the registration at the corresponding time in 1903, these figures show a net loss of thirty-six: —

	Gain.	Loss.
Seniors	..	56
Juniors	5	..
Sophomores	52	..
Freshmen	..	52
Special Students	15	..
	72	108
		72
Net loss		36

During the year the following students died: —

John Joseph Walsh, '04,	Died February 4, 1904.
Henry Clarkson Carter, '06,	Died March 17, 1904.
Thomas Edward Shaughnessy, '06,	Died September 18, 1904
Harry Thayer Whitmarsh, '06,	Died July 19, 1904.
George Scott Baldwin, '07,	Died December 12, 1903.
Henry Mather Stone, '07,	Died May 27, 1904.
Carlos Sanborn Nudd, Special,	Died July 15, 1904.

At Commencement, 1904, four hundred and sixty students, of whom three hundred and three were registered as Seniors, received the degree of Bachelor of Arts, as compared with five hundred and fifteen, of whom three hundred and twenty-one were registered as Seniors, in 1903. The figures of 1904 should be compared with those of 1902 rather than with those of 1903, for in 1904 the

341372

practice of taking the degree at the end of the third year "as of" the class to graduate one year later was first established, and the number of recipients of the degree in 1903 included forty-six who in the *Quinquennial Catalogue* will appear as members of the Class of 1904. In 1902 four hundred and twenty-seven, of whom three hundred and eight were registered as Seniors, received the degree. The registration of the one hundred and fifty-seven who were not registered as Seniors, either for the whole or for half of the year, is shown in the next table, which exhibits also the corresponding figures for 1901, 1902, and 1903: —

	1901.	1902.	1903.	1904.
On leave of absence all the year	18	47	43	35
On leave of absence first half-year	1	..	6	3
On leave of absence second half-year	..	15	33	2
Graduate Students	13	9	6	8
Registered in Law School	27	20	30	28
Registered in Medical School	7	7	7	2
Registered in Dental School	1	..	..	..
Registered in Divinity School	..	1	..	..
Registered in Scientific School	2	7	6	7
Special Students	3	1	..	2
Registered in Junior Class	8	6	11	6
Registered in Sophomore Class	8	6	6	9
Registered in Senior Class of 1900	2	..	..	..
	90	119	148	102
To be designated as of the next year in the *Quinquennial*	..	..	46	48
Received degree at Mid-year	..	..	..	7
			194	157

Of the new provision of the governing boards, whereby a student may receive his degree at the middle of the year, but seven took advantage. The decrease in the number of students taking leave of absence for the second half-year is notable.

The next tables show the losses and gains in the three younger classes between November, 1903, and November, 1904: —

	November, 1903.		Loss.	Gain.	November, 1904.	
Class of 1905	(Juniors)	427	211	49	(Seniors)	265
Class of 1906	(Sophomores)	629	237	51	(Juniors)	443
Class of 1907	(Freshmen)	556	123	177	(Sophomores)	610
			571	277		

Net loss in the three classes between Nov., 1903, and Nov., 1904, . . . 225
(69 more than in 1903)

	Class of 1905.	Class of 1906.	Class of 1907.	Total for three classes.
LOSSES.				
Left College before the end of the year	7	33	35	75
Left College at the end of the year	182	42	29	253
Were "dropped" and left College	1	25	1	27
Entered a lower class	16	104	42	162
Entered a higher class	5	33	16	54
Total loss	211	237	123	571
GAINS.				
From higher classes	6	19	121	146
From lower classes	33	15	00	48
Newly admitted	10	17	56	83
Total gain	49	51	177	277
Net loss	162	186	..	294
Net gain	..	..	54	..

The next table shows the losses and gains in the number of Special Students since December, 1903: —

In attendance, December, 1903	139
Left College before the end of the year	25
Left College at the end of the year	42
Entered a College class	32
Total loss	99
Reëntered College as Special Students, 1904	40
Newly admitted	106
Total	146

The Freshman Class of 1904–05 numbers eleven less than the corresponding class of 1903–04: —

Admitted by examination in 1904	449
Admitted by examination before 1904	27
From a higher class	56
" the Special Students	7
" the Lawrence Scientific School	6
Total	545

Sixty-six candidates, who took in June some of their final examinations for admission, intending to postpone the remainder until September, did not complete this examination in September: three of these were transferred to the Lawrence Scientific School as postponing candidates, and one took examinations over in September for the Lawrence Scientific School; of the remaining sixty-two, nineteen passed in so few subjects that they were notified that they must take all of their examinations over again in September (thirteen of these nineteen tried over their examinations); twenty-four of the sixty-two were not allowed to try the examinations again; two who might have gone on preferred to try all of their examinations again in order to secure a better record. Fifteen, rejected in June, took their examinations again in September; and fourteen, who registered as postponing candidates but who passed in a sufficient number of points to entitle them to admission, were allowed to change their registration, and received admission certificates. Eleven, who took examinations for Harvard College, were later admitted to the Lawrence Scientific School, and four, who had been admitted to the Scientific School, were afterwards admitted to Harvard College. Thirteen, who presented themselves as final candidates, were allowed, after the examinations, to count a part of the examinations they had passed for a preliminary certificate. One preliminary candidate who took his examinations for Harvard College became a candidate for the Scientific School. One, rejected in June, was changed to a postponing candidate for the Lawrence Scientific School; and seven boys, exceptional cases, were allowed to add to a preliminary certificate.

Six hundred and forty-nine candidates, forty-four more than in 1903, took Final Examinations. Of the six hundred and forty-nine, four hundred and ninety-one had preliminary certificates (among these were nine who, for special reasons, had divided their examinations among three years, six completing their examination in June, and three in September); seventy-one divided the examinations between June and September; thirty-three took all of their examinations in June; nineteen took all in September; thirty-five who had a preliminary certificate divided their Final Examinations between June and September. Three preliminary candidates were, with the approval of the head masters of their schools, allowed to become postponing candidates:

	Admitted.	Admitted "Clear."	Rejected.
June	444	228	43
September	128	19	34
Total	572	247	77

Of the six hundred and forty-nine candidates, four hundred and ninety-two offered ancient history rather than modern; fifty-nine, modern rather than ancient; sixty, both ancient and modern; fifteen, ancient and advanced European; eight, modern and advanced European; seven, ancient and the history of a period; and eight, neither.

The next table shows, in order of the number of choices, the offerings of advanced subjects: Latin as usual holds the first place.

	1902.	1903.	1904.
1.	Latin.	Latin.	Latin.
2.	French.	French.	French.
3.	Greek.	Greek.	Greek.
4.	German.	German.	German.
5.	Log. and Trig.	Log. and Trig.	Solid Geometry.
6.	History.	Solid Geometry.	Log. and Trig.
7.	Solid Geometry.	History.	History.
8.	Algebra.	Algebra.	Algebra.
9.	Astronomy.	Astronomy.	Physics.
10.	Physics.	Physics.	Meteorology.
11.	Meteorology.	Meteorology.	Astronomy.

The next table gives the details on which the foregoing table is based: —

Number of candidates offering	1902.		1903.		1904.	
		Per cent.		Per cent.		Per cent.
Advanced Greek	317	48.25	279	46.12	281	43.30
Advanced Latin	541	82.34	504	83.31	511	78.74
Advanced German	157	23.90	182	30.08	204	31.43
Advanced French	401	61.04	344	56.86	385	59.32
Advanced History	82	12.48	78	12.89	90	13.87
Logarithms and Trigonometry	97	14.76	100	16.53	121	18.64
Solid Geometry	77	11.72	85	14.05	122	18.80
Advanced Algebra	71	10.81	51	8.50	64	9.86
Advanced Physics	2	.30	4	.66	6	.92
Astronomy	6	.91	6	.99	4	.62
Meteorology	1	.15	2	.33	5	.77

The next two tables show, for each study, the percentage of failure (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Examinations only: —

(*A*)	1899.	1900.	1901.	1902.	1903.	1904.
ELEMENTARY STUDIES.						
English	9.6	10.2	9.42	6.25	8.43	3.86
Greek	10.6	4.	3.18	3.16	3.55	3.61
Latin	4.65	6.	3.91	5.91	6.77	7.45
German	22.97	17.85	16.67	17.82	11.19	16.61
French	6.65	7.6	7.05	7.71	7.09	9.69
History (Ancient)	5.	8.2	10.46	12.14	10.71	7.65
History (Modern)	10.	7.44	16.54	16.67	6.49	8.75
Algebra	16.55	14.	14.97	10.44	10.70	11.20
Geometry	. .	24.	7.06	13.83	11.11	9.33
Plane Geometry	25.7	26.60	16.38	21.86	17.03	17.05
Physics	18.53	18.44	17.07	17.97	14.38	14.88
Chemistry	18.48	12.	10.82	6.90	11.11	13.83
Physiography	. .	11.	33.33	64.29	57.89	28.57
Anatomy	. .	20.	50.	27.27	50.	30.77
Harmony	. .	. .	. .	. .	. .	. .
ADVANCED STUDIES.						
Greek	14.28	13.16	12.96	11.04	9.32	9.25
Latin	20.	23.45	21.74	27.36	20.42	27.01
German	26.61	30.	31.21	31.85	28.57	37.75
French	18.37	26.47	27.57	22.19	25.29	21.04
History	. .	41.66	45.1	35.37	42.31	37.78
Logarithms and Trigonometry	26.17	23.86	28.85	25.77	23.	33.06
Solid Geometry	20.98	22.58	27.78	41.56	44.71	37.70
Algebra	35.	41.17	48.	56.34	19.61	50.
Physics	37.5	37.5	71.43	100.	75.	66.67
Astronomy	. .	100.	.00	66.67	66.67	50.
Meteorology	. .	50.	100.	.00	.00	20.

(*B*) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	1903.	1904.		1903.	1904.
English	11.39	5.60	Greek	9.59	9.56
Greek	11.36	13.22	Latin	21.33	28.75
Latin	15.50	21.62	German	31.52	44.51
German	24.86	29.78	French	33.33	26.91
French	17.24	22.98	History	44.59	38.64
History (Ancient)	18.75	14.24	Log. and Trig.	24.21	34.78
History (Modern)	12.20	17.07	Solid Geometry	47.50	39.32
Algebra	26.56	28.13	Algebra	20.83	53.33
Geometry	18.37	16.28	Physics	75.	66.67
Plane Geometry	22.34	25.26	Astronomy	66.67	50.
Physics	16.49	17.94	Meteorology	.00	20.
Chemistry	13.04	17.22			
Physiography	57.89	30.77			
Anatomy, etc.	50.	36.36			
Harmony	66.67	.00			

As usual the greatest fluctuation in percentages is in the subjects offered by fewest candidates.

Six hundred and fifty-nine candidates (fifty less than in 1903) took Preliminary Examinations; of these, five hundred and twelve (sixty-one less than in 1903) received certificates: —

Eight points	58
Nine "	7
Ten "	87
Twelve "	101
Thirteen points	3
Fourteen "	111
Fifteen "	5
Sixteen "	73
Seventeen "	3
Eighteen "	36
Nineteen "	2
Twenty "	16
Twenty-two "	5
Twenty-three "	3
Less than eight points	2
Received certificates	512
Failed	147
Total number of candidates	659

The next table gives the percentages of failure in Preliminary Studies: —

ELEMENTARY.			ADVANCED.		
	1903.	1904.		1903.	1904.
English	39.39	27.34	Greek	14.29	36.36
Greek	8.57	9.19	Latin	58.90	54.72
Latin	23.54	36.78	German	40.	20.41
German	27.47	30.05	French	35.62	35.20
French	20.59	25.55	History	83.33	50.
History (Ancient)	27.79	22.76	Log. and Trig.	37.50	33.33
History (Modern)	26.87	35.29	Solid Geometry	73.68	38.46
Algebra	25.70	24.19	Algebra	60.	40.
Geometry	21.28	34.62	Physics	Not off'd	*100.
Plane Geometry	26.03	27.09	Astronomy	Not off'd	*100.
Physics	19.08	17.21	Meteorology	Not off'd	
Chemistry	30.43	9.43			
Physiography	50.	40.			
Anatomy, etc.	57.14	.00†			
Harmony	.00*	.00*			

† Two candidates only. * One candidate only.

In printing statistics of "Credits" won at the examinations for admission to College, I give (*A*) the "Credits" won this year at Final Examinations; (*B*) those won this year and some earlier year by the Final Candidates of this year; and (*C*) those won this year at Preliminary Examinations: —

(*A*) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	June.	Sept.		June.	Sept.
English	22	1	Greek	53	1
Greek	8	3	Latin	41	2
Latin	6	2	German	18	0
German	26	0	French	5	2
French	6	0	History	1	0
History (Ancient)	25	4	Log. and Trig.	14	0
History (Modern)	2	0	Solid Geometry	8	0
Algebra	29	6	Algebra	4	1
Geometry	2	0	Physics	0	0
Plane Geometry	21	0	Astronomy	0	0
Physics	105	16	Meteorology	2	0
Chemistry	13	4			
Physiography	2	2			
Anatomy, etc.	2	0			
Harmony	1	0			
	270	38		146	6

(*B*) ELEMENTARY.		ADVANCED.	
English	23	Greek	54
Greek	51	Latin	44
Latin	80	German	28
German	65	French	8
French	32	History	1
History (Ancient)	53	Log. and Trig.	14
History (Modern)	10	Solid Geometry	8
Algebra	156	Algebra	4
Geometry	6	Physics	0
Plane Geometry	35	Astronomy	0
Physics	144	Meteorology	2
Chemistry	19		
Physiography	2		
Anatomy, etc.	3		
Harmony	1		
	680		163

(*C*) ELEMENTARY.		ADVANCED.	
English	2	Greek	1
Greek	44	Latin	1
Latin	38	German	12
German	38	French	1
French	12	History	0
History (Ancient)	31	Log. and Trig.	0
History (Modern)	1	Solid Geometry	0
Algebra	115	Algebra	3
Geometry	1	Physics	0
Plane Geometry	13	Astronomy	0
Physics	36	Meteorology	0
Chemistry	8		
Physiography	0		
Anatomy, etc.	0		
	339		18

Although the number of candidates who took final examinations this year was larger than that of last year, the Freshman Class is slightly smaller. Accurately to determine the reason for this is, of course, impossible; but the investigations of Professor Charles P. Parker, Chairman of the Committee of Freshman Advisers, have produced interesting and suggestive results. He writes as follows:

"One hundred and eight men who were admitted to Harvard College last summer have failed to register in the College this fall. Eight of these have gone to the Lawrence Scientific School and one to the Dental School, leaving ninety-nine who did not register in the University. Of these about thirty-five are likely to enter next year, leaving sixty-four who will not enter the University at all. At least twenty-two of these have gone to other colleges. There will be about forty-two of whom we shall not be able to give any sure account. Of these more than thirty will be men who came from New England high schools and academies, including public Latin schools. Last year there were seventy-three men admitted who did not register in the College. Five of these entered the Lawrence Scientific School, leaving sixty-eight who did not register in the University that fall. Twenty-eight of these entered a year later, leaving forty who did not enter the University at all. Of these forty at least eleven entered other colleges. Of the other twenty-nine no sure account can be given. More than twenty of them came from New England high schools and academies, including public Latin schools.

"Men trained in the preparatory schools frequented by rich men's sons, when failing to register, have in both years usually signified their intention of entering a year later. The number of such men this year is about seventeen. Last year their number was eleven.

"The failures to register were this year at least thirty more than the previous year. I have noticed that the number was about seventy for several years, and was not prepared for such an increase. I think it is partly accounted for by an increase in the number of rich men's sons who, owing to youth or a desire to travel, have postponed entrance for a year. But some fifteen or twenty men more than last year of those admitted from New England high schools and academies did not come. It would be unsafe to draw any positive conclusions as to the cause of this. It may be an isolated fact like the abnormally large Freshman Class which entered two years ago."

The members of the Administrative Board for the year were Professors Willson, C. P. Parker, Gardiner, Coolidge, Johnson, Ward, Gulick, Palache, Woodworth, Wright; Messrs. Cram, Cobb, Hart, and Whittemore.

During the year two students were expelled for burglary; two were dismissed, one for cheating in thesis work and lying about it, and one for cheating in a final examination; three were suspended, one for dishonesty in connection with the written work of a course, and two for lengthening the Spring Recess without permission; eight on probation had their probation closed for unsatisfactory records; twenty-eight withdrew upon advice or under pressure.

The number of scholars winning a position in the First Group (pp. 110, 111) on the work of the year 1903–04 was fifty-four as against seventy the preceding year. Of the fifty-four thirty-one received scholarships with stipend, twenty-three honorary scholarships. In the preceding year twenty-six students in the First Group held honorary scholarships, and forty-four stipendiary.

In 1890, when the Faculty of Arts and Sciences was organized, the Regulations for Students in Harvard College were printed with this head-note, which has ever since remained there: —

"These Regulations are issued for temporary use, pending a revision of all the Regulations by the Faculty." . . . .

These regulations, save for the new rules for promotion, which went into effect with the Class of 1905, and a few minor changes, are as they were in 1890. The Faculty has never undertaken the promised revision. Fourteen years of experience show that in the main they have worked well, but the increase of the College in numbers has made the administration of two of the rules (3 and 4) difficult and unsatisfactory, and some change, especially in Rule 4, is desirable.

"3. Continuous residence at the University is required during term-time. No interruption of residence is permissible, except for satisfactory reasons stated to the Recorder (orally, if possible) before the student leaves Cambridge. The student who has been absent must also report in person to the Recorder immediately on his return.

"4. A student prevented by sickness or other cause from attending college exercises for a day or more must send notice to the Recorder without delay. Immediately upon his return to duty, he must make, at the Recorder's office (4 University Hall), a specific statement of the cause of his absence; and, if his explanation is satisfactory, his absence will be excused."

"Continuous residence" has been interpreted as attendance upon College exercises. Outside of these a student is free to spend his time where he pleases. A considerable number of students keep their engagements with praiseworthy regularity, but a larger number fall easily into the habit of "cutting." The best way to eradicate this evil is hard to find: in a discussion of it and the relation of students to daily attendance, the students themselves should be divided into two classes, those of scholarship rank and those who fall below this. For the first class Rule 3 should be made more flexible. A student who constantly — not by fits and starts — keeps his work at the honor standard, presenting his theses or other written tests at the appointed time, with whom the instructor is steadily satisfied, — whose record at November, the mid-years, April, and the final examinations, shows that he maintains this standard, — may, and should be, trusted to adjust his hours for himself. He fulfils the purpose for which he is here; the very fact that he is doing his work well insures proper attendance. If, then, such a student wishes to leave Cambridge for two or three days, he may fairly be allowed to do so. Practically never is a student of this class called to the Office for an unsatisfactory record of attendance. It is only with men who fall below the honor standard that the administrative officers have trouble. A large body of these men attend with fair regularity, and attain in their studies a standing which allows them to pass from class to class without either praise or censure; but in addition to these there remains a considerable number who absent themselves from as many College engagements as they can without making a record which will quite warrant the Administrative Board in sending them away, at least without the most vigorous protests and complaints of unfair treatment from both the offending students and their parents. How to deal with these students is one of the most perplexing problems presented to the Board; not infrequently the difficulty is increased by the action of parents themselves, who feel that it is quite legitimate for their

CLASS.	NAME.	SCHOLARSHIP.	HOME.	SCHOOL.
'06	Herbert Percy Arnold	Price Greenleaf	Quincy	Quincy High School.
'05	Clarence Grover Bachrach	John Harvard	Brooklyn, N.Y.	Erasmus Hall High School, Brooklyn, N.Y.
'05	Winthrop Bellamy	Bowditch	West Newton	Newton High School.
'05	George David Birkhoff	John Harvard	Chicago, Ill.	University of Chicago.
'07	Leonard Bloomfield	John Harvard	Elkhart Lake, Wis.	R. A. Waller High School, Chicago, Ill.
'06	John De Quedville Briggs	John Harvard	Cambridge	Cambridge Latin.
'05	Donald Walton Davis	Price Greenleaf	Frazer, Pa.	State Normal, West Chester, Pa.
'05	Dudley Davis	John Harvard	New York, N.Y.	St. Mark's, Southborough.
'05	Harold Simpson Deming	John Harvard	New York, N.Y.	Phillips Academy, Andover.
'05	Richard Priest Dietzman	John Harvard	Louisville, Ky.	Male High School, Louisville, Ky.
'05	Francis Munroe Endicott	John Harvard	Boston	St. Mark's, Southborough.
'06	Robert Franz Foerster	Price Greenleaf	Pittsburg, Pa.	Central High School, Pittsburg Pa.
'05	John Lanman Galey	John Harvard	Buffalo, N.Y.	Central High School, Buffalo, N.Y.
'07	Seth Thomas Gano	Jacob Wendell	Milford, N.Y.	State Normal, Oneonta, N.Y.
'06	Monroe C. Gutman	John Harvard	New York, N.Y.	Sachs Collegiate School, New York, N.Y.
'05	Lewis Wendell Hackett	Price Greenleaf	Belmont, Cal.	Belmont School, Belmont, Cal.
'06	Robert Lee Hale	John Harvard	Cambridge	Albany Academy, Albany, N.Y.
'07	Gorham Waller Harris	John Harvard	Somerville	Somerville Latin High School.
'05	Fitch Harrison Haskell	John Harvard	Ashtabula, O.	Phillips Academy, Exeter, N.H.
'06	Herbert Lester Healy	Bowditch	South Boston	Roxbury High School.
'05	Eugene Arthur Hecker	Richard Augustine Gambrill Palfrey Exhibition	St. Louis, Mo.	High School, St. Louis, Mo.
'05	Edgar Ray Holmes	Price Greenleaf	Cambridge	Syracuse University.
'06	Arthur Merle Hurlin	John Harvard	Jackson, N.H.	Brewster Free Academy, Wolfboro, N.H.
'06	Theodore Francis Jones	Price Greenleaf	Allston	Boston Latin School.
'06	Myer Kabatchnick	Bowditch Wendell Phillips Memorial	Scranton, Pa.	High School, Scranton, Pa.

'05	Israel Isidor Mattuck	Class of 1856	Worcester	Worcester Classical School. [Ill.
'05	Leo Mayer	John Harvard	New York, N.Y.	Sachs Collegiate School, New York,
'07	Ward Mayhew Parker Mitchell	John Harvard	Brookline	Helicon Hall, Englewood, N.J. [N.Y.
'05	Royal Archibald Moore	Lady Mowlson	Cambridge	Adams Academy, Quincy.
'05	Hyman Morrison	John Harvard	Boston	Boston English High School.
'06	John Murdoch, Jr.	Price Greenleaf	Roxbury	Roxbury Latin School.
'07	Frank Conrad Nieweg	Bowditch	Oxford, Pa.	State Normal, West Chester, Pa.
'05	Wilfred Adolphe Openhym	John Harvard	New York, N.Y.	St. George's, Newport, R.I.
'05	George Whitney Outerbridge	John Harvard	Philadelphia, Pa.	North East Manual Training, Phila.,
'06	Andrew Abijah Parker	Ruluff Sterling Choate	Carrington, N.D.	Fargo College, Fargo, N.D. [Pa.
'07	Ernest Edgar Pierce	Bowditch	Goffstown, N.H.	Phillips Academy, Exeter, N.H.
'05	James Arthur Reeves	Matthews	Cambridge	Melrose High School.
'06	Archibald Waldo Roberts	Price Greenleaf	Biddeford, Me.	High School, Biddeford, Me.
'05	Gustavus Hill Robinson	Class of 1802	New York, N.Y.	Mount Hermon.
'07	Will Carson Ryan	Bowditch	New York, N.Y.	Morris High School, New York, N.Y.
'05	William Joseph Scarlett	John Harvard	Columbus, O.	Ohio State University.
'07	Forrest Ritter Shanaman	Bowditch	Reading, Pa.	Boys' High School, Reading, Pa.
'05	Henry Maurice Sheffer	Price Greenleaf	Boston	Boston Latin School.
'06	Augustus Whittemore Soule	John Harvard	New York, N.Y.	St. Paul's, Concord, N.H.
'06	William Wentworth Thayer	John Harvard	Concord, N.H.	Phillips Academy, Andover.
'06	Otis Johnson Todd	Saltonstall	Blooming Valley, Pa.	A.M., Chesbrough Seminary, North
'05	Walworth Tyng	Bowditch	Reading	Cambridge Latin School. [Chili, N.Y.
'06	Ralph Irving Underhill	Bowditch	Brooklyn, N.Y.	Pratt Institute High School, Brooklyn,
'06	Frank Charles Wheeler	Price Greenleaf	Newport, Vt.	Somerville Latin High School. [N.Y.
'07	Thomas York	Bowditch	Mount Carmel, Pa.	Phillips Academy, Exeter, N.H.

sons to absent themselves from Cambridge for pleasure trips and parties. Students who maintain only a record which allows them to pass from class to class without distinction should, I believe, be held closely to their engagements; at least they can learn punctuality. What number of absences — or whether any at all, unless for protracted illness or some equally weighty reason, — should be excused is a problem difficult to solve. If some are to go unquestioned, from the "Office" point of view, a fixed number, which the student uses as he pleases, is most easily administered.

The increased number of students, to which reference has already been made, has removed from Rules 3 and 4 a certain part of what may be called the personal element; for although it is possible for the Recorder to see personally practically all those who may be obliged to go away from Cambridge, it is quite impossible for him, with all the other demands upon his time, to see at the time the notices are presented all of those who give an excuse for an absence from recitations of a day or more. Hence has grown up the practice of "signing off" (giving written notice of the beginning of an absence), and "signing on" (written notice of its end), — two operations which not infrequently take place at the same time.

In the matter of excuses for absences the standard of honor among a considerable body of our students, generous, and in other affairs high-minded, of whom the College may otherwise be proud, is deplorably low. That a student should "sign off" for a sick friend is natural and legimate; but the standard of honor of the two men is low when the invalid waits in the hall outside the Office for his friend to join him, or spends the day in town, returning just in time to meet the physician who has been sent to see him. "I was glad, of course," one student said when questioned about the "sick excuse" he had given for prolonging the Thanksgiving Recess, "that if I was going to be sick I was sick at this time," admitting when questioned further that his sickness had not confined him to the house where he was visiting or prevented him from going to the theatre that same night. This is but a single example of a state of mind far from uncommon. Many students assume that the mere presentation of a reason for an absence thereby excuses it. They quite forget that to have an absence excused the reason must satisfy a College officer. No sane man can accept as sufficient the great body of excuses handed in by students who ask to be treated as men, — weak eyes (few sufferers realize that they can carry their ears to a lecture), colds, headaches, stomach-aches, and that intestinal trouble whose most serious havoc is in the orthography rather than the bodies of its victims. The "Office" must, and does, take a student's word that he was not feeling quite well; but many students are indignant that it refuses to accept, as satisfactory, excuses which, when they are questioned on the subject, they frankly admit they know would not be accepted from them in a business office,—excuses which, furthermore, they would not present there. Over and over again to the remark, "You know that were you in business such a record of attendance would cost you your job," comes the reply, "O yes, but this is different." An administrative officer has no more difficult task than to make a student understand that there is, and should be, no difference between business in College and business in the world, and that dereliction in the one should bring as speedy a dismissal as it would in the other.

An examination of the relations of the "sign-offs" to the places in which the "signers-off" live brings results which hardly need comment. The following table, prepared by the Assistant Recorder, covers the four weeks ending Saturday, April 16. The eleven dormitories enumerated lie practically, it may be said, in one region,—that south of the College Yard. In this list are not included the excuses from students living in private houses or the smaller dormitories in this same region. Had this been done, the difference between the percentages would have been even more remarkable.

TABLE OF "SIGN OFFS."

Dormitories.	Number of occupants, undergraduate.	"Sign offs."	Per cent.
Beck	22	17	77.2
Claverly	78	35	44.8
Craigie	71	24	33.8
Drayton	18	9	50.0
Dunster	21	26	123.8
Everett	16	7	43.7
Fairfax	23	11	47.8
Hampden	46	30	65.2
Randolph	74	39	52.7
Ware	31	13	41.9
Westmorly	67	37	55.2
	467	248	53.1
Places, other than the above	1534	331	21.5
	2001	579	28.9

"During the four weeks ending Saturday, April 16, there were 579 'sign offs' for 'illness' from the 2001 students then enrolled in the College proper.

"57.1% of the 'sign offs' came from 1534 students. 42.8% of the 'sign offs' came from 467 students. That is, 42.8% of the 'sign offs' came from 23.3% of the undergraduates, and 57.1% came from 76.6% of the undergraduates."

The fundamental difficulty in dealing with this evil of "signing off" is the fact that these excuses must be passed upon in the College Office and not by a physician. I believe that the administration of this whole matter of "sick excuses" should be removed from the Office and put into the hands of the College physician. His relations would be, as they always have been, strictly confidential, like the relations of any physician to his patient. Notice of sickness would be sent to the physician, who would then take charge of the case and inform the Office for how long a time the absences of the sick student should be excused. If it is advisable that a physician other than the College Officer take charge of a case, a satisfactory adjustment can be made: few who have not examined sick excuses can realize how easily a list of physicians whose certificates would be trustworthy could be prepared from data already in possession of the College.

The admirable practice of the Dean of the Scientific School of calling upon every student in the School who gives notice of illness, has produced most excellent results, and can be carried out where the number of students is not large. The number upon whom he has to call, he says, has greatly decreased since the practice was inaugurated, but in so large a body as the College, there must be delegated for the duty someone who can give practically all of his time to it. It has been said that some students would probably look upon such a practice with suspicion, but such suspicion could not exist long, for the groundlessness of it would soon be clear. Certainly a student who is genuinely ill need have no fear, and as for those who absent themselves on account of little ills which young men in business disregard, the sooner this habit is broken up, the quicker will the whole moral tone of College life be improved.

An examination of the records of the Administrative Board since its establishment points to but one conclusion, — that its policy has been to interpret rules liberally, to do away with petty restrictions, and to place responsibility on students. Practically it may be said that the College has but three rules, — that a student shall be a gentleman, keep his engagements, and present satisfactory evidence of work. The student who cannot abide by these should seek membership in some other community.

B. S. HURLBUT, *Dean.*

THE LAWRENCE SCIENTIFIC SCHOOL.

To the President of the University: —

Sir, — As Dean of the Lawrence Scientific School I submit to you the following report for the academic year 1903–04.

The number of students registered in the School during this and the preceding academic year, as well as their distribution by classes and four-year courses of study, is set forth in the following tables: —

REGISTRATION BY CLASSES.

Class.	1902–03.	1903–04.
Fourth-Year	94	85
Third-Year	83	80
Second-Year	151	149
First-Year	136	114
Specials	120	120
Totals	584	548

SPECIAL STUDENTS.

Number of years in attendance.	1902–03.	1903–04.
One	91	70
Two	24	41
Three	3	9
Four	2	..
Totals	120	120

REGISTRATION FOR ADMISSION EXAMINATIONS.

Year.	Preliminary.	Final.	Total.
1903	96	176	272
1904	111	172	283

DISTRIBUTION OF STUDENTS IN FOUR-YEAR PROGRAMMES.

Programme.	1902–03.	1903–04.
Civil Engineering	72	72
Mechanical Engineering	70	56
Electrical Engineering	61	74
Mining and Metallurgy	75	68
Architecture	35	40
Landscape Architecture	11	16
Forestry	..	7
Chemistry	32	23
Geology	3	4
Biology	16	14
Anatomy and Physiology	38	35
Teachers of Science	30	13
General Science	141	126
Totals	584	548

As will be noted the decrease in the number of students enrolled in the several Departments, which began in 1903–04, has been continued in a less measure in the present academic year. The loss in 1903–04 was thirty-six; the further loss of the present year is eighteen. Inasmuch as the requirements for admission to the School are as great as those demanded for admission to the College (where the degree of Bachelor of Arts can be obtained in a year less of time than is required to attain the degree of Bachelor of Science), and as the graduates of either school are admitted on equal terms to the Medical or Law School, it is to be expected that students who are seeking a general training will generally enter the College.

The number of students enrolled in those programmes which lead directly to professional employment, as will be seen from the tables, has been but little affected by the increase in the requirements for admission. The total number in these programmes in 1902–03 was 443, while in 1903–04 it was 422, and this present year 434. It thus appears that the greater demands of the entrance examinations are not likely to prove a permanent obstacle to the further growth of the School.

It will be observed that the number of persons registered as Special Students has varied but little in recent years; there has been, however, a considerable change in the quality of these students. In larger measure than in the last decade the resort to the group is from mature men who desire to avail themselves of instruction in some special field, but who have no intention of proceeding to the degree. The remainder of this group, much more than half of the total number, consists of young men who mostly come from high schools which do not provide all the instruction necessary for our entrance examinations. These students are required to pass one-half of the admission subjects and to obtain from the master of the school whence they come a recommendation that they be admitted, with a statement that, in the opinion of the master, they are fitted to do the work they wish to do. This method of admission to the group of Special Students has proved, on the whole, satisfactory. By far the larger number of those entering by this method are successful in their studies; many of them attain regular standing in the second year of the professional programmes at the end of their first year of residence. It will be seen that this method of admission combines that of the certificate of the secondary school with that of our entrance examinations. In the present condition of the experiment the results may fairly be deemed promising, provided it is somewhat rigorously administered. It has a great advantage in that it opens the way for many able young men who might otherwise be barred from the University.

It is evident that the term "special" student is ill applied when it is used to designate the very diverse groups of students now included in that category. The term should be limited to those persons who are pursuing particular studies with no intention of seeking the degree; while some other designation should be found for the group wherein are placed those students who have only partially satisfied the requirements for admission to regular standing.

The discipline of the School continues in a satisfactory state: during the year the probations of sixteen students were closed because of inadequate performance of duty; one hundred and thirty-one were, for this reason, placed on probation; one was suspended for handing in written work which was not altogether his own. The once considerable evil of "signing off" for trifling indispositions has practically disappeared, those now claiming exemption from duty on account of illness being, on the average, fewer than two per cent. of the number registered. During the year there were two deaths; but the cases of serious illness were few.

N. S. SHALER, *Dean.*

ATHLETIC SPORTS.

To the President of the University: —

Sir, — I have the honor of submitting to you a report for the academic year 1903–04 on the work of the Committee on the Regulation of Athletic Sports.

Having entire supervision and control of all athletic exercises within and without the precincts of the University, the Committee exercises a general supervision over the grounds and buildings devoted by the University to athletic sports and exercises, with the exception of the Hemenway Gymnasium. Of the grounds, Jarvis Field is at present devoted entirely to tennis and contains six double and twenty single courts. These in the season are in so great demand that additional courts have been laid out from time to time on Holmes Field adjoining, which at present contains one double and twelve single courts. Of these, two courts have been reserved for the use of members of the Faculty and their families after one P. M. Additional courts will undoubtedly be needed the coming season, and a graduate of the University has offered to make good the expense of laying out such courts. Holmes Field has also been used sporadically for other sports, including hockey, cricket, and lacrosse; but owing to the inconvenience to the occupants of the adjoining University buildings and the danger of injuring the equipment, the use of the field for all sports except tennis and hockey will be discontinued.

Norton's Field has been used occasionally for base-ball and cricket; and although the area of the field has been diminished by a division of the land, there is still a limited opportunity there for informal practice.

The development of Soldier's Field has steadily progressed, and Professor Hollis has generously consented to continue his general supervision of the improvements. These improvements include the gradual reclaiming of those portions of the field which are not yet filled, graded, and turfed. A space about 600 feet square within the northwestern bend will ultimately be assigned to cricket. It is hoped that the peat which has been found in this portion of the field may be utilized as fuel, so that the grading of that part may thus pay for itself.

A permanent and fireproof grand-stand of concrete or brick and steel would be a desirable and sightly addition to the useful embellishments of the field. The plan and proportions of a Greek theatre would not be ill-adapted to this purpose.

During the current year the readjustment of the southern boundary line of the field has been arranged between the Corporation and the Board of Park Commissioners for the City of Boston. By an exchange of land the line is now straight, and the City is to open a street along this line. As the Committee has acquired possession of the only remaining piece of property on the north of this street which did not belong to Soldier's Field, the field itself will now be entirely bounded by streets, — a desirable consummation. The fence surrounding the field will be completed on the south line as soon as the grade of the street is established. A temporary board fence will meanwhile be erected.

The construction of the Stadium has been provisionally finished. At present the entire seating arrangement which was originally planned has been completed, and the first grading of the ground beneath the seats. The addition, at the north ends, of two towers, which are also to contain waiting-rooms, provides ample means of descent from the seats by a series of wide staircases. Two sets of similar staircases have been added under each side of the building. The surface of the Stadium is to be treated in a manner which will obliterate the marks of the moulding-boards, so that the whole superficies will have a finished appearance. Owing to unexpected additional expenses entailed by changes in the price of materials and in the amount of material necessary, and by the various necessary and desirable alterations in the building plans, the cost of the structure has been greater than was at first anticipated. For this reason it has seemed to the Committee inexpedient, for the present, to erect the additional story which was to form the crown of the edifice, containing a balcony closed on the outside, with the exception of occasional windows, and open on the inside in the form of a loggia. However, the magnificent sweep of the open promenade which now may be enjoyed from the top will meantime afford some compensation. A plaster model of the Stadium in its final form has been constructed by the direction of the Committee, 6 feet and 4 inches by 4 feet 10 inches in size, and forms a part of the Harvard exhibit at St. Louis. The *Harvard Engineering Journal* for June, 1904, is devoted to an official account, profusely illustrated from photographs and plans, of the origin, materials, design and methods of construction of the Stadium, together with a description of ancient stadia and circuses. The cost of the Stadium to date is approximately two hundred and fifty thousand dollars, of which one hundred thousand dollars was contributed by the Class of 1879, while a part of the remainder was provided from the accumulated surplus funds of the Committee. The debt which now remains is about seventy thousand dollars. This debt the Committee hopes to cancel within the next few years.

The elaborate preparations now made for the accommodation of the public have grown out of a desire to secure proper accommodations for those interested in the contestants, including the students and their friends. This has gradually necessitated the building of convenient seats for the spectators, and in order to exclude any undesirable fringe of random observers, grounds have been enclosed, and an admission fee has been charged. The admission fee is largely in the nature of a contribution on the part of students for the support of these contests, and it is not utilized as a means of revenue for private gain. The proceeds of such meetings are employed for the care of grounds and buildings, and for the expenses of the games, which in fairness should not be borne by the players themselves.

The large income which these gate receipts now yield undoubtedly tends to encourage some wastefulness, and aids in the expansion of informal sport into a formal business. This income has gradually led to the development of an extensive equipment which has induced the impression that the spectacular side is one which is persistently cultivated by athletic managements. This is, however, far from being the case. The tendency in intercollegiate circles at present, and for some years past, has been to limit these contests, so far as possible, to meetings between college teams to be held on college grounds. It may have been noticed that the Harvard athletic contests are not generally advertised officially, with the exception, perhaps, that posters are placed upon street cars. These posters are largely for the purpose of furnishing directions to those who are planning to attend games. The athletic authorities in Cambridge have thus limited, so far as feasible, the public announcements of athletic proceedings. Criticisms on the construction of so large and expensive a building as the Stadium, for instance, might be justified if its main purpose were to encourage merely the spectacular side of intercollegiate contests, even if its erection has been rendered possible by a generous gift from graduates of the College. It may be said, however, that, as it seems difficult to check the recourse to such contests, on account of the number of undergraduates, graduates, and their friends, who desire to attend, it seemed proper to erect a structure that would not only be dignified and impressive in appearance, but might also secure the safety of a large audience whose lives have really been in some peril when the wooden stands have been crowded at the great games, and when such enclosures have been formed that egress has been a matter of slow and inconvenient motion. A similar peril has attended the Class-Day exercises about the statue of John Harvard. Considerations such as these have actuated those in authority, rather than the desire to cater to a public thirst for gladiatorial contests after the pattern of those the exigencies of which required the erection of the Flavian amphitheatre.

The Stadium has already been used for foot-ball, for track athletics, for cricket, and for lacrosse. The Class-Day exercises which were held in it proved a successful experiment. The great spaces beneath the seats of the Stadium may ultimately be utilized for many athletic interests. There is abundant room for quarters for the different teams, for rifle or pistol ranges, for offices, and for miscellaneous storage purposes. Space, for instance, could be found for the storage of any number of library books not needed or in transit. The construction of a large swimming pool, recommended as long ago as 1892 in a report of a committee of the Overseers, would be an advantageous addition to the accommodations of the field. If locker space could be provided about the Stadium, the present locker building might possibly be employed for such a pool.

Up to the present year the Harvard Gun Club has used Soldier's Field for practice in shooting clay pigeons, and has erected there a club house, with the permission of the Committee, which also contributes towards the expense. Apparently no one has been disturbed by this practice and no injuries have been reported. The practice, however, has been found to be a violation of the ordinances of the City of Boston, and the Gun Club has been required to leave Soldier's Field and to seek other quarters.

The facilities for rowing afforded by the University Boat House and the Weld Boat House have been utilized as usual, and the equipment has been efficiently maintained.

The principal additional minor improvements and repairs of the year are as follows: — Painting the fence around Soldier's Field, building a new running track in the Stadium, laying out a new diamond, and filling a considerable area of the marsh in the outfield with cinders; retubing one of the boilers in the locker building; putting in a new tank and heater in the Weld Boat Club, which will increase the storage capacity of hot water three-fold, and increasing the radiating pipe surface in the dressing room five times; and replacing the slings and blocks for hoisting the launch on to the car for the New London trip (the old ones having been burned in a fire at Central Wharf last winter), an expense of six or seven hundred dollars. For the benefit of the members of the crews practising at New London during the June examination period, a special examination booth was erected by the Committee last spring in order to insure greater quiet and more ample accommodations. This booth was in the form of a sectional cottage which can be folded up and packed away.

The Committee is also expected to have supervision over the times and places of all athletic contests, the precedents regarding which have been substantially continued during the past season. In the so-called major sports, namely, base-ball, foot-ball, rowing, and track athletics, there seems to be little tendency to extend the number of contests or to depart from the principle of college games on college grounds alone. The so-called minor sports under the supervision of the Committee comprise basket-ball, cricket, fencing, hockey, and lacrosse, as well as golf, the Gun Club, gymnastics, hand-ball, the Rifle and Pistol Club, swimming, and tennis. In a number of these the tendency has been to enlarge the schedules and to imitate the more elaborate methods of preparation for the major sports in the way of establishing training-tables and securing expert coaching. In the case of some of these sports the schedules include a number of non-collegiate organizations, and in the case of hockey the principal contests have taken place in New York City, and so may not be conveniently witnessed by students of any of the institutions concerned except Columbia. The Committee has had grave doubts about the desirability of permitting contests of such a nature, held in a large and distant city, in a rink not under the direct control of college authorities. Serious doubts have also been expressed regarding the propriety of the extension of those minor sports occurring during the winter season, whereby the active athletic season is likely to become continuous from the opening of the fall term until after Commencement. The Committee, however, desires in every way to encourage the winter sports and all the minor sports, as opportunities for exercise; and it is right to add that in many cases, although not in all cases, those taking part in the latter are men not engaged in the major sports, so that the apparent distractions of this continuity of athletic contests do not affect the same individuals.

The Committee is also expected to exercise some supervision over the physical condition of those engaged in athletic sports. Unfortunate episodes have happened in connection with the training of the foot-ball team and of the Freshman crew during the past season, and while it is fair to call attention to the general good condition of the great majority of our athletes and to the lack of any serious breakdown on the part of individuals, with only one or two exceptions, the Committee has nevertheless taken steps to have a plan submitted for the more thorough and complete supervision of the physical condition of athletes in all branches. A report on this subject is to be made at the beginning of the fall season.

Friendly athletic relations with other institutions have been furthered by the continuance of the informal conferences between members of the bodies governing athletics in certain institutions, and by many private meetings and much private correspondence between these authorities. A number of differences have thus been satisfactorily adjusted without inviting the attention of the general public. The question of a closer athletic organization between different institutions has been much debated, but no entirely satisfactory plan of organization has as yet been presented. The question of summer base-ball is one which would seem to demand some joint action, and continues to be the most ominous cloud on the horizon.

The period of the two-year agreement with Yale has nearly expired, and although its terms do not yet affect all students of both Universities, the working of the agreement has been smooth. Only one minor case for submission to the committee of arbitration has occurred. Any minor changes or modifications in the agreement may readily be made at the time set for renewal in January, 1905.

During the summer of 1904 a collection and classification was made of the records of the Committee and of other official data referring in general to the history of athletics in the University. This material includes the minutes and correspondence of the Committee since its organization in 1882, and its reorganization in 1888; the official reports upon athletics made from time to time to the authorities of the University; references to athletics in the reports of the President of the University; and articles on athletics in the *Harvard Graduates' Magazine*. These materials are to be filed and classified by year and subject. A complete record of all the athletic contests in which Harvard has taken part, and of the men who have participated in such contests, is soon to be concluded. These various collections will form the official sources for information regarding Harvard athletics, or for a history of athletic sports at Harvard.

A permanent room has been secured and suitably furnished in the Harvard Union for meetings of the Committee and for the accommodation of its appurtenances.

Slight modifications of the Regulations of the Committee have been made during the year, and some additional legislation has been accomplished. The more important items among the proceedings of the Committee are as follows: —

The Committee having received late in the previous year a communication from the Faculty of Arts and Sciences to the effect that the Faculty had voted to refer the question of discontinuing intercollegiate foot-ball to the Committee for its consideration and advice, returned the following answer: —

> "Having examined the question submitted, the Committee would respectfully reply that in its opinion the present situation in intercollegiate athletics does not appear to render advisable the discontinuance of intercollegiate foot-ball at Harvard.
>
> "The steps taken in the investigation were as follows: The question was discussed by the general committee, and also a conference was arranged between prominent foot-ball coaches and former members of the foot-ball team, and the Committee itself. A full and frank discussion followed, in which the objections to the game were stated which had been made at the meeting of the Faculty, and information was requested upon the various points raised. The consensus of opinion was to the effect that the game had improved in many of its features in recent years, that the relation between opposing teams, particularly between Harvard and Yale, were of a friendly nature; and that an effort should be made to obviate certain apparently objectionable features.
>
> "The sentiments expressed in the Faculty were also communicated to the Intercollegiate Rules Committee which forms the playing rules, and similar expressions of opinion reached that body from other sources. In obedience to this general demand for some change in the playing rules, the Rules Committee formulated and published after Commencement a number of alterations which are to be initiated during the present season, and which it is believed will improve the game in the directions desired.
>
> "The Committee ventures also to express the opinion that the game of foot-ball is only one of many distractions in college life, and that there is no evidence that its abolition would necessarily turn the attention of students to more serious pursuits."

To check the tendency to lengthen winter schedules it was decided not to permit the basket-ball and hockey teams to play more than three matches at such a distance that the team could not return to Cambridge by the evening of the day on which the game was played.

The proposition to create the position of a paid foot-ball coach, to have general supervision of the game of foot-ball at Harvard as a college pastime, without reference to intercollegiate contests, was laid on the table.

To prevent speculation, the privilege of applying for tickets to the large games, formerly enjoyed by holders of season tickets, was abolished.

In order to give the Committee a better control in cases involving possible violations of the eligibility rules, a rule was passed that no student of Harvard University who has played on any semi-professional nine, or on any so-called summer base-ball nine, shall represent Harvard University in any public athletic contest until he has received special permission from the Committee.

The rule permitting a student to participate for not more than four years in intercollegiate contests was modified so as to affect only the four major sports. The purpose of this amendment was to avoid needless and perplexing complications in applying the rule which formerly covered a number of comparatively unimportant branches.

An important modification of the penalty of complete debarment from participation in intercollegiate contests on account of any violation, however slight or remote, of the eligibility rules, was prepared at an intercollegiate conference, and generally accepted. This modification limits the term of disqualification, and will be defined and promulgated by the Committee during the coming year.

At the close of the academic year the Committee adopted and published a definite financial policy for the immediate future. The announcement also included a revision of the arrangements for awards of prizes and insignia. The main features of this policy, which include certain principles already established, are these: —

1. The four major sports, foot-ball, base-ball, rowing, and track athletics, shall be supported from the general gate receipt fund in those branches, and, in addition, it shall be necessary for the track team and crew managements to raise $2,500 and $3,000 respectively in subscriptions.

2. All minor sports shall be self-supporting and receive no appropriation from the Athletic Committee, except for permanent equipment.

3. In case there be a deficit in any one branch of athletics, this deficit shall be made up before intercollegiate contests in that branch are permitted to be continued.

4. The Freshman teams shall be considered on the same basis as the minor sports.

The explanatory statement authorized by the Committee which accompanied the announcement of the above plan stated that for some time it had seemed necessary to adopt a permanent policy regarding the question of prizes and gifts to members of athletic teams, with respect to the collection of subscriptions, and with regard to the financial help which should properly be given to the different branches of athletics. The natural tendency on the part of undergraduate managers, where there seems to be a large income from athletics, is to increase steadily the expenditures, to enlarge the privileges given to members of teams, and to drift into a system of awards and rewards which tends sometimes to accentuate unduly the material gains which may accrue from participation in athletics. The Committee regards the income from athletics as a fund which should be considered in the nature of a trust to be administered in the most economical fashion consistent with the adequate equipment and conduct of sports, while the surplus should be made as large as possible, in order that it may be utilized for the benefit of the athletic plant, which is designed for the use of the University as a whole.

In a report of a Committee of the Board of Overseers (No. LXIII, April 14, 1897), it was suggested that any surplus in the gate receipts derived from athletic contests be devoted to permanent improvements in the College athletic grounds or buildings. This suggestion embodies the settled policy of the Committee, — a policy which is authorized, and indeed seems almost imperative, by reason of the articles of agreement entered into by the athletic associations of Harvard University in 1889, establishing a graduate treasurer. The fourth article of this agreement prescribes that any surplus over the usual expenses shall be spent in athletics.

The Committee also regards the tendency to provide free instruction in various branches of athletics as an extension, perhaps not illegitimate, of its functions, and of the application of the funds, but an extension which must at present be curtailed on account of more pressing demands upon the funds in other perfectly legitimate directions.

Among these demands, the most pressing at present is the debt upon the Stadium. The payment of this debt has been guaranteed by friends of the University, but the Committee is naturally anxious to relieve these friends of this obligation at the earliest possible moment. Other important and extensive improvements are also planned in connection with Soldier's Field. The Committee therefore believes that it is necessary to accentuate this pressing need for economy of expenditure at this time in all directions, and trusts that the student members of the University will perceive the desirability of continuing to give active financial assistance to their own teams, at least as liberally as in the past. The amounts contributed by students for the support of athletics have been diminishing rather than increasing, in spite of the steady increase in the number of those attending the University.

The Committee hopes that ultimately the charge for admission to the games for students may be made even lower than it is at present. It may not be generally understood that the average cost of admission to a game for a holder of an H. A. A. ticket is about twelve cents. A more remote hope of the Committee is to accumulate an endowment sufficient to render subscriptions, except for special occasions, no longer necessary.

H. S. WHITE, *Chairman.*

THE GRADUATE SCHOOL.

To the President of the University: —

Sir, — As Dean of the Graduate School I have the honor to submit my report upon the School for the academic year 1903–04.

The members of the Administrative Board were Professors C. L. Jackson, Davis, G. F. Moore, von Jagemann, Kittredge, Münsterberg, and Bôcher, and the writer. The only member who had not been in service the previous year was Professor Moore. The Board met ten times in the course of the year.

This report will consider, first, the members of the School, with some special account of the amount, variety, and grade of the work done by them; secondly, the degrees for which recommendations were made at the close of the year and the holders of these degrees; thirdly, fellowships and scholarships; and, fourthly, miscellaneous topics.

STUDENTS.

The number of students registered in the School for 1903–04 was four hundred and twenty-seven, one hundred and two more than in the preceding year. With these might be included as virtual Graduate Students twenty-six Seniors, who, though registered in Harvard College, were pursuing studies that had been approved for the degree of Master of Arts.

Table I. — Number and Classification of Students.

	1901–02.		1902–03.		1903–04.	
I. Resident Students doing full work in the School for the whole academic year . . .	218		216		289	
Resident Students not doing full work or not working for the whole year as Resident Students	86		94		123	
	—	304	—	310	—	412
Non-Resident Students holding fellowships .	11		15		14	
Non-Resident Students not holding fellowships	0		0		1	
	—	11	—	15	—	15

II. Students whose studies lay chiefly in *			
i. Semitic Languages and History	1	1	2
ii. Ancient Languages (Classics and Sanskrit)	41	37	37
iii. Modern Languages (including Comparative Literature)	70	74	111
iv. History and Political Science	52	52	78
v. Philosophy (including Education)	41	50	64
vi. Fine Arts (including Architecture)	6	11	15
vii. Music	1	0	5
viii. Mathematics	17	22	21
ix. Engineering	6	5	9
x. Physics	13	12	14
xi. Chemistry	21	24	25
xii. Biology	23	19	19
xiii. Geology	13	12	20
xiv. Anthropology	2	2	0
Unclassed Students	8	4	7
	— 315	— 325	— 427

III. First-year Students	157	175	259
Second-year Students	83	83	89
Third-year Students	36	36	51
Fourth-year Students	27	13	18
Students in a fifth or later year	12	18	10
	— 315	— 325	— 427

IV. A.B.'s and S.B.'s of Harvard University and of no other institution	94	96	149
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University	43	26	25
Students not holding the Harvard degree of A.B. or S.B.	178	203	253
	— 315	— 325	— 427

Students holding the Harvard degree of A.M., S.M., Ph.D., or S.D.	100	100	104
Students holding the Harvard degree of A.B. or S.B., but not of A.M., S.M., Ph.D., or S.D.	90	72	125
Students holding no Harvard degree in Arts, Philosophy, or Science	125	153	198
	— 315	— 325	— 427

Admission to the Graduate School is ordinarily granted to holders of the Bachelor's degree of colleges of good standing, and to a few other persons of maturity. By a recent enactment of the Faculty, undergraduates of Harvard College who have nearly or quite completed the requirement for the degree of Bachelor of Arts may be admitted to the School, but only as candidates for the degree of

---

* For detailed statistics as to the number of Graduate Students enrolled in the various courses of instruction offered by the Faculty of Arts and Sciences, see the Report of the Dean, pp. 53–82.

Master of Arts. The colleges and universities that were represented in the School in 1903–04 are named in Tables V and IX.

Table I exhibits the usual classification of the students of the School, and is given for convenience of comparison for the three successive years, 1901–02, 1902–03, 1903–04. My remarks on this table and on the following tables, which supplement it, have reference, first, to the members of the School in general and to the amount of work done by them; secondly, to their fields of study and to the distribution of their work among the courses of instruction offered by the Faculty; thirdly, to their periods of residence; and, fourthly, to the extent to which the School draws its members from institutions other than Harvard University.

Of the Resident Students, three hundred and sixty-eight were in attendance throughout the whole year. Of this number, two hundred and eighty-nine were doing either what is technically described as a full year of work, four courses or their equivalent, or a larger amount of work. Seventy-nine of those in residence throughout the year were doing partial work, that is, less than four courses. Of the remaining forty-four Resident Students, twenty-three entered the School after November 1st, and twenty withdrew before the end of the year.

The School lost one student by death: Thorvaldur Thorvaldson, Jr., student of physics and mathematics, died on February 9, 1904. He was a graduate in Arts of the University of Manitoba, in Science of Harvard University, a man of high character, great ability, and of singular promise, who looked forward to a life of usefulness in Iceland, his native country.

In Table II are given the statistics for the last eighteen years of Resident Students doing full work or partial work, and of Non-Resident Students, as well as of the whole number of students in the School for this period. It is a wholesome sign that the proportion of men is increasing, though only gradually, who are able to devote all their time to their university work. Of the whole number who were in residence throughout the year, nearly four-fifths were doing full work.

It is impossible to measure with accuracy the amount of work which a man will do who devotes his entire time to his studies — the full-work man. For purposes of comparison, measurements in terms of numbers of courses are misleading and inadequate: students differ in intellectual capacity; courses differ greatly in difficulty and in their demands on the student's time, and every serious student does a large amount of work that is not covered by

TABLE II. — RESIDENT STUDENTS DOING FULL WORK, AND NON-RESIDENT STUDENTS: 1886–1904.

	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.	1894–95.	1895–96.	1896–97.	1897–98.	1898–99.	1899–1900.	1900–01.	1901–02.	1902–03.	1903–04.
Resident Students doing full work in the School for the whole academic year	38	48	50	62	62	108	127	162	161	175	194	171	218	227	226	218	216	289
Resident Students not doing full work or not working for the whole year as Resident Students . .	26	36	39	34	55	79	73	86	94	105	96	107	103	99	113	86	94	123
Whole number of Resident Students	64	84	89	96	117	187	200	248	255	280	290	278	321	326	339	304	310	412
Non-Resident Students holding fellowships . . .	10	10	9	11	11	9	9	10	12	13	14	15	12	13	14	11	15	14
Non-Resident Students not holding fellowships . .	4	3	1	4	4	4	7	1	5	6	2	. .	3	2	. .	. .	. .	1
Whole number of Non-Resident Students	14	13	10	15	15	13	16	11	17	19	16	15	15	15	14	11	15	15
Whole number of students	78	97	99	111	132	200	216	259	272	299	306	293	336	341	353	315	325	427
Percentage of Resident Students doing full work for whole academic year	59	57	56	65	53	58	64	65	63	63	67	62	68	70	67	72	70	70

the statistics of his courses. It is, however, a matter of interest that of the ninety-three members of the Graduate School who obtained the degree of Master of Arts in 1904 on work done wholly in 1903–04, forty-six were enrolled in four courses only; twenty-one in four and a half; twenty-two in five; two in five and a half, and two again in six courses. The remaining twenty did less than four courses in 1903–04, having work to their credit which they had completed in a previous year.

Of the group of Non-Resident Students in 1903–04, one only was not a travelling fellow. The number of Non-Resident Students who were not travelling fellows has never in the history of the School exceeded seven.

The second division of Table I indicates in general the fields of learning and science in which the work of the students lay. Although nearly every student concentrates his work, especially if he is a candidate for a degree, in some specialty, either of field or of topic, and is therefore properly assigned to some one Department or Division, his work in many cases will fall in more than one of these subdivisions. Hence the figures given in this table are regularly less than the number of men who actually take work in the Departments or Divisions in the list. Exact information on the choice of studies of Graduate Students is given in the Report of the Dean of the Faculty of Arts and Sciences (see above, pp. 53–82), and also in Table III below.

In 1903–04 the Divisions of the Faculty, arranged according to the number of students who specialized under each, were: —

Modern Languages,
History and Political Science,
Philosophy (including Education),
Ancient Languages,
Chemistry,
Mathematics,
Geology,
Biology,
Fine Arts (including Architecture),
Physics,
Engineering,
Music,
Semitic.

If we gather the Divisions into three great groups — first, of the languages, ancient and modern; second, of the historical and philosophical sciences; and third, of the mathematical, physical, and so-called natural sciences — we may note that thirty-six per cent. of the students belonged to the first group, thirty-nine per cent. to the second group, and twenty-five per cent. to the third group. In other words, three-quarters of the students of the Graduate School in this University in 1903–04 were pursuing the study of languages and literature, together with history, economics, philosophy, and the fine arts, while one-quarter were students of mathematics and the physical and biological sciences. In the previous year the proportions were two-thirds and one-third respectively, which was substantially the proportion of previous years. The change in 1903–04 is significant.

The proportion of students who receive higher degrees at the close of the year is not the same for all Divisions, and it varies also within the several Divisions from year to year. In 1903–04, in the Divisions in which five or more students took higher degrees, we may note that in Ancient Languages and in History and Political Science nearly two-thirds of the students received such degrees; in Biology more than one-half, in Modern Languages, in Mathematics, and in Physics a little less than one-half, while in Philosophy and in Geology the proportion was a trifle more than one-third. (See Table XIII.)

In Table III — which is compiled from the lists furnished by the Dean of the Faculty (see pp. 53–82) — an attempt is made to show for the several Departments and fields of learning, first, the number of choices of courses (and half-courses) made by Graduate Students, from those offered by the Faculty in 1903–04, and, secondly, the grade of the courses chosen, the courses being placed according to the system now in vogue in three groups: I, Courses primarily for Undergraduates; II, Courses for Undergraduates and Graduates; and, III, Courses primarily for Graduates.

This table affords information on two subjects in particular: first, on the relative number of elections of studies in the Departments and Divisions of the Faculty of Arts and Sciences, and, secondly, on the relative amount of elementary and advanced work done by members of the Graduate School.

The totals of choices in terms of courses, as given in the table, will show the relative number of elections in the several Departments or minor fields. If we examine this table along with Table I — in which the number of students who specialize under the several Departments is given — it becomes apparent that many of the men who specialize in one Division do considerable work outside the Division. The totals of choices for the several Divisions, where there were more than ten choices, are: —

Modern Languages, 358 [4],
History and Political Science, 250½ [4],
Philosophy (including Education), 174½ [9],
Ancient Languages, 112 [2½],
Mathematics, 68,
Engineering, 58,
Chemistry, 57 [28],
Geology, 54½ [9½],
Fine Arts, 43½ [2],
Biology, 44 [27],
Physics, 35½ [8]

TABLE III. — NUMBER OF ELECTIONS OF COURSES (AND HALF-COURSES) BY GRADUATE STUDENTS: 1903–04.

[Half-courses are indicated by *italics*. Figures within square brackets are explained below.]

	Semitic.	Ancient Languages.			Modern Languages.								Hist. & Pol. Sci.	
		Indic Philol.	Classics.		Comp. Philol.	English	Germ.	French.	Italian.	Span.	Rom. Philol.	Comp. Liter.	Hist. & Gov't.	Econ.
			Greek.	Latin.										
I. For Undergraduates	..	..	*5*	*7*	..	3	4, *1*	2	2	..	..	..	..	1
II. “ “ and Graduates.	4, *2*	..	18, *6*	19, *15*	..	84, *116*	9, *8*	14, *10*	11	2	..	16	74, *76*	60, *64*
			Class. Philol.											
III. “ Graduates.	3 ..	1, *6* ..	34, *41* [*2½]		10, *4* ..	25, *59* [*1½]	6, *51* ..	5, *6* ..	6 ..	13 ..	15 [*2½]	*3* ..	19, *8* [1]	17, *11* [*3]
Totals (in courses).	8	4	108		12	199½	49	29	19	15	15	17½	135	115½
Percentage of choices in III.	37½	100	50		100	27	60	28	81	87	100	9	17	19
“ “ “ II.	62½	..	44		..	71	29	68	58	13	..	91	83	80
“ “ “ I.	..	..	6		..	2	1	4	1	..	..	..	..	1

	Philosophy.		Fine Arts, etc.		Math. & Astron.	Engineering.	Physics	Chemistry.	Biology.		Geology.			TOTAL.
		Education.	Fine Arts.	Architecture.					Bot.	Zoöl.	Geol.& Geog.	Miner. &Pet.	Mini'g	
I. For Undergraduates	5	..	4	23, *1*	4, *3*	16, *5*	6, *1*	13, *3*	*5*	*2*	*9*	2	*4*	62, *45*
II. “ “ and Graduates.	35, *27*	10, *22*	4		37, *13*	23, *31*	10, *16*	5, *10*	4, *4*	7, *23*	8, *7*	6	4, *19*	498, *477*
III. “ Graduates.	71 [*4, 5]	29 ..	4 ..	4 [1]	11, *16* ..	1 ..	11 [8]	28, *9* [*1,27]	6 [10]	10 [17]	12 [5]	1 ..	2 [4½]	344, *217*
Totals (in courses).	124½	50	12	27½	68	58	35½	57	14½	29½	28	9	17½	1273[96]
Percentage of choices in III.	57	58	33⅓	14	29	2	31	57	41	34	48	11	11	36
“ “ “ II.	39	42	33⅓	86	64	66	51	18	41	63	41	67	78	57½
“ “ “ I.	4	..	33⅓		7	32	18	25	17	3	16	22	11	6½

NOTE. — To the figures in the Table should be added: Celtic, *2* (in Group III); Slavic, 1 (II); History of Religion, 2, *2* (II); Landscape Architecture, 3 (II), 1, [1] (III); Forestry, *5* (I–II); Music, 2 (II), [*2] (III); Anthropology, 3 (II). — Figures within square brackets indicate additional work credited to students, done either in connection with courses, or (marked by an *) independently of courses, both kinds being expressed in terms of courses; these figures are not included in the totals, either of this Table or of the list on page 133.

Certain courses in Group III (primarily for Graduates) are sometimes taken by Graduate Students to count for more than a single course (viz., a course and a half, two, three, or four courses), where a proportionately larger amount of time is given to them. In 1903–04 forty-six men took such work, which foots up to the equivalent of eighty-one and one-half courses; each one of fifteen of these men did all his work in connection with but one course, which thus counted for four courses. Eight other men — holders of scholarships, or candidates for a Doctor's degree — did work which was supervised by their respective Departments, though not recorded as done in connection with any course in particular; this amounted, technically speaking, to fourteen and one-half courses. In judging relatively the total amount of work done in the several Departments or in the several groups — as contrasted with the number of elections of courses — the figures for both these classes (indicated in the table and in the list above by square brackets, but not included in the totals) should be included. If this total of 96 be added to the 1273 of Table III the grand total becomes 1369; this would change the percentage for Group I to 6 (from 6½), for Group II to 54 (from 57½), and for Group III to 40 (from 36). The relatively large number of men who take this additional work in the scientific Departments, especially Chemistry and Biology, is noteworthy: it means that men in these fields find it profitable to take fewer courses but to do more in each than men in other Departments.

There is a striking difference between the several Divisions and Departments in the proportion of work done by their Graduate Students in the three groups of courses which are classified as elementary (primarily for Undergraduates), somewhat advanced (for Undergraduates or Graduates), and most advanced (for Graduates). On the assumption that these classifications are accurate and have been consistently made — a rather bold assumption, to be sure — this difference means that in range and quality of attainment the Graduate Students differ greatly in the several Departments. Where the percentage of students who select courses from the highest group is large, we may safely assume that the Graduate Students of that Department as a whole are better prepared for advanced and special work than where the percentage is small. Where, however, a large proportion of the choices is made in the elementary or in the intermediate group, the students as a class have come to the University less well prepared for higher work. Of course, every Department will show many individual exceptions.

This table should be suggestive to officers of government, as well as to officers of instruction and administration, especially in the light of similar statistics for former years. It shows the former in a general way where the instruction, as made use of by Graduate Students, is obviously strong and popular (if we may judge from the resort to it), and where therefore it needs to be maintained on its present high standard, or developed; where also it appears to need support and enlargement. The Faculty may among other things get some hints from it as to the proper distribution of financial aid for students among the Departments, having in mind not only the proportionate number but also the proportion of best-trained students in each Department.

The next division of Table I, with which Table IV should be compared, gives information about the period of residence of men in the School. About three-fifths of the students were in the School for their first year, and of these first-year men a little more than one-third secured a Master's degree (ninety-one Masters of Arts and two Masters of Science out of two hundred and fifty-nine). About one-fifth were in their second year, and the remaining one-fifth were in their third, or a later year of residence. The proportion of men in the first year was larger than ever before. Statistics continue to show that the majority of men who come to the Graduate School intend to remain in it but a single year, and that not one-half of them have a degree in view. This condition, which is peculiar to the Graduate School, sets an unusual problem before those who have at heart the interests of advanced liberal instruction at this University.

TABLE IV. — PERCENTAGE OF STUDENTS IN THEIR FIRST AND FOLLOWING YEARS: 1898–1904.

	1898–99.	1899–1900.	1900–01.	1901–02.	1902–03.	1903–04.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
First-year Students . .	55	53	54	50	54	61
Second-year Students .	21	25	23	26	26	21
Third-year Students .	13	11	15	12	11	12
Fourth-year Students and Students of longer residence .	11	11	8	12	9	6

The fact that most members of the Graduate School are in it for but one year is only one of several points of difference between the Graduate School and the other graduate departments of the University, the professional schools of Law, Medicine, and Divinity. In the latter nearly all the first-year men are fresh from college and intend to remain in their school three or four years. In the Graduate School only a small proportion are fresh from college. The Graduate Students are ordinarily rather mature young men who, in many instances, have been engaged in teaching, in other professional work, or in Graduate study elsewhere. Thus, of the first-year students in 1903–04, about forty-two per cent. (119) entered the School immediately after receiving the first degree in Arts or Science, or completing the requirements for it. (Of this category in 1902–03 the proportion was thirty-two per cent.; in 1901–02 it was twenty-six per cent.) Thirteen per cent. had been one year out of college, that is, had received their first degree in 1902 (34); eight per cent. had received their degree in 1901 (21); a little less than eight per cent. in 1900 (19), while the remainder, about twenty-nine per cent., had received their first degrees in 1899 or in an earlier year, that is, four or more years before entering the Graduate School. It is a good sign for the higher education that the proportion is increasing of men who are able to continue their advanced studies immediately after leaving college.

The fourth division of Table I shows in general the extent to which the School draws its members from Harvard University, as contrasted with other institutions. For detailed information on this point Tables V and IX may be consulted. About fifty-four per cent. of the members of the School held a degree from Harvard University, and the remaining forty-six per cent. held no Harvard degree. (In 1902–03 the proportions were nearly the same, fifty-three per cent. and forty-seven per cent. respectively.) The percentage of students who held no Harvard first degree in Arts or Sciences is given in Table VI. The drop in the percentage of students who held no Harvard first degree in Arts or Sciences is due to the unusually large accession of first-year men from Harvard College.

Tables V and IX supplement each other and show in detail the extent to which different parts of the country and the different higher institutions contribute to the membership of the Graduate School. In Table V are given the various colleges and universities, including professional and technical schools, American and foreign, whose graduates were members of the School in 1903–04, together with the degrees these men held and the number of different men from each institution.

TABLE V. — COLLEGES AND UNIVERSITIES, WITH DEGREES HELD: 1903–04.

	A.B.	S.B.	LITT.B.	PH.B.	A.M.	S.M.	PH.D.	S.T.B.	LL.B.	M.D.	No. Degrees.	No. Persons.
Acadia University, N. S.	3				2						5	3
Agricultural College of Utah		2									2	2
Albany Law School, N. Y.									1		1	1
Alma College, Mich.			1								1	1
Amherst College, Mass.	12	2			5						19	14
Bates College, Me.	3										3	3
Beloit College, Wis.	2										2	2
Berea College, Ky.	1										1	1
Boston University, Mass.	4							1			5	5
Bowdoin College, Me.	7				1						8	7
Brigham Young College, Utah	1										1	1
Brown University, R. I.	9			2	6						17	12
Bucknell University, Pa.	1										1	1
California, University of	3				4						7	4
Central University, Ky.	1										1	1
Chicago, University of, Ill.					1						1	1
Cincinnati, University of, O.			1								1	1
Colby College, Me.	3				1						4	3
College of Charleston, S. C.	1										1	1
Columbia University, N. Y.	3				1		1				5	5
Cornell College, Ia.				1							1	1
Cornell University, N. Y.		1									1	1
Dalhousie University, N. S.	1	1			1						3	2
Dartmouth College, N. H.	10	1			2					1	14	12
Davidson College, N. C.	2				1						3	2
Delaware College	1										1	1
Denison University, O.	2	1									3	3
De Pauw University, Ind.	1			2							3	3
Dickinson College, Pa.	2				1						3	2
Drew Theological Seminary, N. J.								1			1	1
Earlham College, Ind.	1										1	1

Gates College, Neb.	1	...	...	...	...	...	...	...	...	...	1	1
General Theological Seminary, N. Y.	...	...	...	...	...	...	...	1	...	...	1	1
Georgia, University of	1	...	...	...	...	...	...	...	...	...	1	1
Grove City College, Pa.	1	...	...	...	1	...	...	...	...	...	2	1
Hamilton College, N. Y.	1	...	...	...	1	...	...	...	...	...	2	1
Hamline University, Minn.	...	...	...	1	...	...	...	...	...	...	1	1
Hanover College, Ind.	1	...	...	...	...	...	...	...	...	...	1	1
Harvard University	158	14	...	...	102	2	5	1	1	1	284	232
Haverford College, Pa.	7	...	...	...	1	...	...	...	...	...	8	7
Heidelberg, University of, Germany	...	...	...	...	...	...	1	...	...	...	1	1
Hiram College, O.	2	...	...	...	...	...	...	...	...	...	2	2
Hobart College, N. Y.	1	...	...	...	...	...	...	...	...	...	1	1
Illinois, University of	1	1	...	...	1	...	...	...	...	...	3	2
Illinois Wesleyan University	...	1	...	...	...	...	...	...	...	...	1	1
Indiana University	1	...	...	...	1	...	...	...	...	...	2	2
Iowa College	...	...	...	1	...	...	...	...	...	...	1	1
Johns Hopkins University, Md.	2	...	...	...	...	...	...	...	...	...	2	2
Kansas, University of	2	...	...	...	1	...	...	...	...	...	3	3
Kansas Wesleyan University	1	...	...	...	...	...	...	...	...	...	1	1
Keiogijuku University, Japan	3	...	...	...	...	...	...	...	...	...	3	3
Kenyon College, O.	...	...	...	1	1	...	...	...	...	...	2	1
Leland Stanford Jr. University, Cal.	4	...	...	...	1	...	...	...	...	...	5	4
Lincoln University, Ill.	1	...	...	...	...	...	...	...	...	...	1	1
McKendree College, Ill.	1	...	...	...	...	...	...	...	...	...	1	1
McMaster University, Ont.	1	...	...	...	1	...	...	...	...	...	2	1
Manitoba, University of	1	...	...	...	...	...	...	...	...	...	1	1
Massachusetts Institute of Technology	...	1	...	...	...	...	...	...	...	...	1	1
Mercer University, Ga.	1	...	...	...	1	...	...	...	...	...	2	1
Michigan, University of	6	1	...	3	1	...	...	...	...	...	11	10
Missouri, University of	1	...	1	...	...	...	...	...	...	...	2	2
Montana College	...	1	...	...	...	1	...	...	...	...	2	1
Muhlenberg College, Pa.	1	...	...	...	...	...	...	...	...	...	1	1
National Normal University, O.	...	1	...	...	...	...	...	...	...	...	1	1
Nebraska, University of	1	...	...	...	1	...	...	...	...	...	2	1
New Mexico, University of	...	1	...	...	...	...	...	...	...	...	1	1
New York University	...	1	...	1	...	...	...	...	...	1	3	3

TABLE V. — CONTINUED.

	A.B.	S.B.	LITT.B.	PH.B.	A.M.	S.M.	PH.D.	S.T.B.	LL.B.	M.D.	No. Degrees.	No. Persons.
North Carolina, University of	1	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	2	2
Northwestern University, Ill.	. . .	1	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	2	2
Ohio Northern University	1	. . .	1	1	. . .	. . .	. . .	. . .	. . .	. . .	3	2
Ohio State University	. . .	1	. . .	1	. . .	1	. . .	. . .	. . .	. . .	3	2
Ohio Wesleyan University	7	1	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	9	8
Oklahoma, University of	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	1
Oregon, University of	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2	2
Otterbein University, O.	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	1
Paris, University of, France *	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2	2
Pennsylvania, University of	2	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4	4
Prague, University of, Austria	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	1	1
Princeton University, N. J.	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	1
Pritchett College, Mo.	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	1	1
Queen's University, Ont.	. . .	. . .	. . .	. . .	2	. . .	. . .	. . .	. . .	. . .	2	2
Rhode Island College	. . .	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2	2
Rochester, University of, N. Y.	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2	2
Rutgers College, N. J.	1	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	2	1
St. Anselm's College, N. H.	1	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	2	1
St. Lawrence University, N.Y.	1	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	2	1
South Carolina College	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	1	1
South Dakota, University of	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	1	1
Southern University, Ala.	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	1
State University of Iowa	. . .	. . .	. . .	1	1	1	. . .	. . .	. . .	. . .	3	2
Swarthmore College, Pa.*	. . .	1	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3	2
Syracuse University, N.Y.	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	1
Texas, University of	4	1	. . .	. . .	4	. . .	. . .	. . .	. . .	. . .	9	5
Toronto, University of, Ont.	4	. . .	. . .	. . .	2	. . .	. . .	. . .	. . .	. . .	6	4
Trinity College, Conn.	5	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	6	5
Trinity College, N. C.	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	1	1
Tufts College, Mass.	5	. . .	. . .	. . .	4	. . .	. . .	. . .	. . .	. . .	9	6
Upper Iowa University	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	1	1

Utah, University of		1									1	1
Valparaiso College, Ind.	1										1	1
Vanderbilt University, Tenn.	2				1			1			4	3
Vermont, University of	1			1	1						3	2
Victoria University, England	1										1	1
Vienna, University of, Austria							1				1	1
Virginia, University of	1				1						2	1
Washington and Jefferson College, Pa.	2				1		1				4	2
Washington and Lee University, Va.					1		1				2	1
Washington University, Mo.	1	1									2	2
Weatherford College, Tex.	1										1	1
Wesleyan University, Conn.	4										4	4
Western College, Ia.	1										1	1
Western Maryland College	1										1	1
Western Reserve University, O.	1		1								2	2
West Virginia University	5				1				1		7	6
Willamette University, Ore.	1										1	1
Williams College, Mass.	7										7	7
Wisconsin, University of *	1	1	1			1					5	3
Wofford College, S.C.*	2										3	3
Worcester Polytechnic Institute, Mass.		1									1	1
Yale University, Conn.	8				2						10	9
Total	357	43	8	19	168	8	11	5	3	3		516
Non-Graduates and other Graduates (see note)												26
												542
Deduct for names counted twice or more than twice												115
												427

---

* Besides the degrees enumerated above, the following were held by one or two persons as indicated: D.D., Wofford College, S.C.; Litt.M. (2), Swarthmore College, Pa., and the University of Wisconsin; Heb.B. and Rabbi, Hebrew Union College, O.; B.C.E. and C.E., University of Maine; Pd.B. (2), Michigan State Normal School, and Southwest Kansas College; Pd.M., Michigan State Normal School; S.D.B., Missouri State Normal School, Warrensburg; Agrégé-des-lettres, University of Paris, France; Landbouwkundige, Higher School of Agriculture and Forestry, Wageningen, Holland. There were, further, in the School one graduate each of Andover Theological Seminary, Mass.; Meadville Theological School, Pa.; Western Theological Seminary, Pa.; United States Naval Academy, Md.; and the Königliche Academie der Tonkunst, Munich, Germany. There were three students from European Universities who had received no academic degree. There were six Harvard College Seniors on leave of absence; five other non-graduates of Harvard College; and one non-graduate of the Massachusetts Institute of Technology.

TABLE VI. — PERCENTAGE OF STUDENTS FROM OTHER COLLEGES.

	1896–97.	1897–98.	1898–99.	1899–1900.	1900–01.	1901–02.	1902–03.	1903–04.
Percentage of Students holding no Harvard degree	40	40	41	44	44	40	46	46
Percentage of Students holding no Harvard first degree in Arts or Sciences	52	55	55	61	62	56	62	59

These tables (V, VII, IX) show that men continue to come to the Graduate School from colleges and universities in all parts of the country, and, to a slight extent, from those in Canada and foreign lands. The entire number of institutions thus represented is one hundred and thirty-one.

TABLE VII. — FIRST-YEAR MEN: PERCENTAGE FROM VARIOUS COLLEGES AND UNIVERSITIES — 1901–02, 1902–03, 1903–04.

	1901–02.	1902–03.	1903–04.
Harvard	31	33	38
Other New England Colleges	14	20	21
Colleges in the Central States	34	24	18
Colleges in States West of the Mississippi	9	12	9
Colleges in Southern States	4	6	7
Colleges in Canada	7	3	3
Foreign Universities	..	..	4

Table VII gives the percentage of first-year men from various colleges and universities for the last three years. Noteworthy is the steady increase of men from Harvard and the decline in the proportion of men from the Central and Western States. It is probable that the recent developments in the great universities of the Central States have drawn students from the colleges in this region to these universities, and have thus diminished their resort to the Harvard Graduate School.

The most common degree held by members of the School was that of Bachelor of Arts (three hundred and fifty-seven), next, that of Master of Arts. There were one hundred and sixty-eight Masters of Arts, eight Masters of Science, and eleven Doctors of Philosophy in the School in 1903–04, as against one hundred and sixty-one Masters of Arts, thirteen Masters of Science, and ten Doctors of Philosophy in the preceding year.

TABLE VIII. — PERCENTAGE OF BACHELORS' DEGREES OF DIFFERENT KINDS: 1897–1904.

	1897–98.	1898–99.	1899–1900.	1900–01.	1901–02.	1902–03.	1903–04.
A.B.'s	84	86	84	80	84	83	84
S.B.'s	9	8	10	11	11	10	10
Other Bachelors' degrees	7	6	6	9	5	7	6

The percentage of Bachelors' degrees in Arts and Science for the last seven years is remarkably constant.

The list of colleges that send four or more men each year to the Graduate School varies only slightly from year to year, as may be seen in Table IX. Leaving Harvard graduates out of consideration, there were in 1896–97 fourteen colleges represented by four or more men; in 1897–98, eighteen; in 1898–99, fifteen; in 1899–1900, twenty-four; in 1901–02, seventeen; in 1902–03, twenty; in 1903–04, twenty.

The colleges and universities that have been steadiest in the supply of Graduate Students for the past seven years, each sending four or more every year, are Amherst, Brown, California, and Yale. Other colleges that within this period of seven years have sent for six years four or more men are Bowdoin, Haverford, Michigan, Toronto, and Tufts; for five years, Dartmouth, Northwestern, Leland Stanford Jr., and Ohio Wesleyan; for four years, Kansas and Oberlin; and for three years, Beloit, Boston University, Dalhousie, Pennsylvania, Trinity (Connecticut), Wesleyan (Connecticut), Western Reserve, and Williams.

It is interesting to note that six members of the Graduate School were holders of travelling fellowships from some other institution, viz., Amherst (a South End House Fellowship and the Rufus B. Kellogg University Fellowship), Bowdoin (the Charles Carroll Everett Fellowship), Princeton (the Boudinot Fellowship), Swarthmore (the Joshua Lippincott Fellowship), and the University of Paris (Cercle Français Fellowship). With these might well be classed the holder of the George Foster Peabody Scholarship of this University, which is open only to graduates of the University of Georgia, and the three holders of the scholarships of the Harvard Clubs of Chicago, St. Louis, and San Francisco, respectively, who come each from a college in or near one of these cities.

TABLE IX. — COLLEGES AND UNIVERSITIES REPRESENTED BY FOUR OR MORE GRADUATES IN THE SCHOOL: 1899–1900, 1900–01, 1901–02, 1902–03, 1903–04.

1899–1900.		1900–01.		1901–02.		1902–03.		1903–04.	
Harvard,	191	Harvard,	197	Harvard,	189	Harvard,	174	Harvard,	232
California,	8	Brown,	11	Amherst,	8	Brown,	11	Amherst,	14
Amherst,	7	Amherst,	10	Bowdoin,	8	Amherst,	10	Brown,	12
Michigan,	7	Bowdoin,	9	Brown,	8	Bowdoin,	7	Dartmouth,	12
Oberlin,	6	Oberlin,	9	California,	7	Dartmouth,	7	Michigan,	10
Leland Stanford Jr.,	6	California,	7	Toronto,	6	Chicago,	7	Yale,	9
Northwestern,	6	Illinois,	7	Dalhousie,	5	Michigan,	7	Ohio Wesleyan,	8
Brown,	5	Michigan,	7	Dartmouth,	5	Columbia,	6	Bowdoin,	7
Haverford,	5	Yale,	7	Ohio Wesleyan,	5	Leland Stanford Jr.,	6	Haverford,	7
Pennsylvania,	5	Dartmouth,	6	Trinity (Conn.),	5	Northwestern,	6	Williams,	7
Toronto,	5	Toronto,	6	New Brunswick,	5	Tufts,	6	Tufts,	6
Tufts,	5	Wesleyan (Conn.),	6	Missouri,	5	California,	6	West Virginia,	6
Wesleyan (Conn.),	5	Williams,	6	Haverford,	4	Yale,	6	Boston Univ.,	5
Beloit,	4	Boston Univ.,	5	Oberlin,	4	Haverford,	5	Columbia,	5
Boston Univ.,	4	Kansas,	5	Princeton,	4	Ohio Wesleyan,	5	Texas,	5
Bowdoin,	4	Northwestern,	5	Tufts,	4	Trinity (Conn.),	5	Leland Stanford Jr.,	4
Colby,	4	Pennsylvania,	5	Yale,	4	Texas,	5	Trinity (Conn.),	4
Dalhousie,	4	Tufts,	5			Beloit,	4	California,	4
Indiana,	4	Beloit,	4			New York,	4	Pennsylvania,	4
Kansas,	4	Dalhousie,	4			Williams,	4	Toronto,	4
Nebraska,	4	Haverford,	4			Wofford,	4	Wesleyan (Conn.),	4
Rochester,	4	Nebraska,	4						
Western Reserve,	4	New Brunswick,	4						
Williams,	4								
Yale,	4								
Total Membership,	341		353		315		325		427

A cursory examination of Table V, particularly of the higher degrees there recorded, shows that a large proportion of the students had pursued graduate studies before beginning the work of the year with us. Closer inspection of the lists of students shows that in 1903–04 over one-half of the members of the School (two hundred and twenty-six) had previously carried on such studies, there having been two hundred and one that had not. Of this half, eighty-eight students — or about one-fifth of the whole number — had carried on these graduate studies at other universities. Of these eighty-eight, thirty had had graduate studies at Harvard also.

With the students who have pursued graduate studies elsewhere may be grouped teachers who are on formal leave of absence and expect to return to the positions which they have left. The number of these is large: seventeen colleges were represented in the School by professors or other instructors on leave of absence, as were also five preparatory schools or institutions of similar grade. These figures do not include a very important group of about forty men in the School who, while carrying on their studies, were teaching in or near Cambridge. Twenty-two such teachers were in the service of this University, not including forty-seven others who were assistants. There were in the School seventeen other teachers, eight of whom were teaching in neighboring colleges, and nine in schools or academies.

Table X shows that in the last seven years a trifle more than three-fifths of the students were born out of New England. On the other hand, as many as one-half claim residence in New England (Table XI). The proportion of men from the Southern States is happily larger than it has been for the past seven years.

Of the four hundred and twenty-seven students in the School in 1903–04, sixty-nine were married men, whose wives and families for the most part accompanied them to Cambridge. Of these married men, ten were holders of fellowships or scholarships, including four Austin Scholars. These students occasionally have difficulty in finding accommodations for themselves and their families during their temporary sojourn at the University. Apartment houses or small hotels which could furnish such students with apartments for short terms (one, two, or three years) would, I am convinced, be popular.

TABLE X. — BIRTHPLACES OF GRADUATE STUDENTS: 1897–1904.

	1897–98.	1898–99.	1899–1900.	1900–01.	1901–02.	1902–03.	1903–04.
Students born in the New England States	121	143	122	127	107	122	168
Students born in other Northern States east of the Mississippi River	89	106	119	136	109	108	141
Students born in Southern States east of the Mississippi River . .	19	15	17	16	11	14	31
Students born in States west of the Mississippi River	26	30	34	30	39	39	35
Students born in the Dominion of Canada	18	25	23	21	22	16	17
Students born in other foreign countries	20	17	26	23	27	26	35
Total number of students . .	293	336	341	353	315	325	427
Percentage of students born in New England	41	43	36	36	34	38	39
Percentage of students born elsewhere	59	57	64	64	66	62	61

TABLE XI. — RESIDENCES OF GRADUATE STUDENTS: 1900–1904.

	1900–01.	1901–02.	1902–03.	1903–04.
New England States	167	146	167	221
Northern States east of the Mississippi River .	99	88	88	120
Southern States east of the Mississippi River .	16	11	12	25
States west of the Mississippi River	46	45	40	38
Canada	18	19	12	13
Foreign countries	7	6	6	10
	353	315	325	427

DEGREES.

Two hundred and fourteen men were recommended* for the higher degrees of Doctor or Master at Commencement, 1904, a larger number by thirty-four than in any previous year. The details are found in the following table (XII), which gives in the first and second parts the number of students in the Graduate School recommended by the Faculty of Arts and Sciences for any degree, and the number of other students recommended for the four higher degrees in the three years, 1902, 1903, and 1904. In the other part of the table all persons recommended for the higher degrees are classified with reference to their previous graduation as Bachelors of Arts or of Science.

---

* The number of persons recommended each year, and that of the men who actually receive the degree, as published in the Annual Catalogue, do not always agree. Usually a few of the candidates recommended do not receive the degree at once. The degree is in these cases ordinarily conferred in a later year, "as of" the year in which the recommendation was made.

TABLE XII.—RECOMMENDATIONS FOR DEGREES IN 1902–04.

	1902.		1903.		1904.	
I. Graduate Students recommended for A.B. . .	11		10		3	
Graduate Students recommended for A.M. . .	94		97		113	
Graduate Students recommended for S.M. . .	8		6		3	
Graduate Students recommended for Ph.D. .	28		28		44	
Graduate Students recommended for S.D. . .	3	144	1	142	1	164
II. College Seniors recommended for A.M. . . .	1		1		0	
College Seniors of a preceding year, recommended for A.M. on work done in Senior year	19		24		36	
College Juniors of a preceding year, recommended for A.M. on work done in Junior year	0		1		0	
L.S.S. fourth-year men of a preceding year, recommended for S.M. on work done in L.S.S. fourth year	0		1		0	
Professional students recommended for A.M. on special courses of study	10		5		15	
Professional students recommended for Ph.D. on special courses of study	0	30	0	32	2	53
Total of the above list		174		174		217
Deduct Graduate Students recommended for A.B.		11		10		3
Total number recommended for A.M., S.M., Ph.D., and S.D.		163		164		214
III. Harvard Bachelors of Arts or Science, not previously graduated elsewhere	58		68		95	
Harvard Bachelors of Arts or Science, previously graduated elsewhere	31		12		11	
Students not Harvard Bachelors of Arts or Science	74	163	84	164	108	214

Two or three remarks may be made on this table. Of the men who were recommended for higher degrees, seventy-five per cent. were Graduate Students (one hundred and sixty-one), and only seven per cent. of the entire number, though a larger number than ever before, had completed their work while registered in another graduate department of the University, as Law or Divinity Students.

Seventeen per cent. of the recipients of the higher degrees had never been registered in the Graduate School or in a graduate department of this University; these were thirty-six men who had completed their work as undergraduates (Seniors). Hereafter, however, this anomaly — of undergraduates qualifying for a graduate degree — will disappear (see below, p. 165). Only three men received the degree of Bachelor of Arts. This anomaly also — of qualifying for an undergraduate degree in the Graduate School — will disappear.

There has been now for more than six years a gradual increase in the proportion of non-Harvard men who come up for the higher degrees — from forty-four per cent. in 1899 to fifty and one-half per cent. in 1904.

TABLE XIII. — DIVISIONS AND DEPARTMENTS IN WHICH RECOMMENDATIONS FOR THE HIGHER DEGREES WERE MADE IN 1904.

		DEGREES.			
DIVISION.	DEPARTMENT.	A.M.	S.M.	PH.D.	S.D.
I. Semitic Languages and History		..	..	..	..
II. Ancient Languages:					
	Indic Philology	..	..	1	..
	The Classics (Greek, Latin)	18	..	3	..
	Total in Ancient Languages	18	..	4	..
III. Modern Languages:					
	English	28	..	3	..
	Germanic Languages and Literatures	1	..	..	..
	French, and other Romance Languages and Literatures	11	..	5	..
	In more than one Department	2	..	..	..
	Total in Modern Languages	42	..	8	..
IV. History and Political Science:					
	History and Government	23	..	4	..
	Political Economy	17	..	1	..
	Total in Hist. and Political Sci.	40	..	5	..
V. Philosophy		16	..	8	..
	[Education	5]			
VI. The Fine Arts:					
	History and Principles of the Fine Arts	1	..	..	..
	Architecture	..	1	..	..
	Total in the Fine Arts	1	1	..	..
VII. Music		..	..	..	..
VIII. Mathematics		9	..	1	..
IX. Engineering		3	..	..	..
X. Physics		4	..	2	..
XI. Chemistry		6	..	5	..

Division.	Department.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
XII. Biology:					
	Botany	1	1	5	..
	Zoölogy	1	..	3	..
	Total in Biology	— 2	— 1	— 8	— ..
XIII. Geology:					
	Geology and Geography	2	..	2	..
	Mineralogy and Petrography	1	..	..	..
	Mining and Metallurgy	1	1	..	1
	Total in Geology	— 4	— 1	— 2	— 1
XIV. Anthropology		..	..	1	..
In more than one Division		4	..	..	..
Professional Students:					
	Divinity School	12	..	2	..
	Law School	3	..	..	..
	Medical School	..	..	..	..
	Total	164	3	46	1

In Table XIII are indicated the Departments or fields of study in which lay the chief work of the successful candidates for the higher degrees. A comparison of this table with Table III, with a view to determining the relation of the choice of courses by Graduate Students to the degrees won, may be of interest.

Seven of the fourteen Divisions were represented by ten or more candidates: Modern Languages by fifty (including eight Doctors); History and Political Science by forty-five (including five Doctors); Philosophy by twenty-four (including four Doctors); Ancient Languages by twenty-two (including four Doctors); Biology by eleven (including eight Doctors); Chemistry by eleven (including five Doctors); Mathematics by ten (including one Doctor).

One hundred and sixty-seven Masters were recommended in course (one hundred and sixty-four in Arts and three in Science), a larger number than ever before. Forty-six Doctors of Philosophy and one Doctor of Science were created. Two of the Doctors of Philosophy were Divinity Students; the remainder were Graduate Students.

The degree of Doctor was conferred on the forty-seven men named below. With each name is indicated the special field in which the degree was taken, the candidate's academic history in brief, the subject of his thesis, and his present occupation.

The Doctors of Philosophy were: —

Philology.

HAVEN DARLING BRACKETT.
Classical Philology. — A.B. (*Amherst Coll.*) 1898. — Res. Gr. Stud., 1901–04.
Thesis: "De Enuntiatorum Temporalium apud Herodotum Usu atque Ratione Commentatio."
Instructor in Greek and Latin, Clark College, Worcester.

EDWARD ERNEST BRAITHWAITE.
Semitic Languages and History. — A.B. (*McGill Univ., Que.*) 1886, S.T.B. (*Oberlin Coll., O.*) 1890, A.M. (*Harvard Univ.*) 1901. — Stud., Harvard Divinity School, 1900–01 and 1902–03.
Thesis: "Is there a 'Priests' Code' in the Pentateuch?"
Pastor of the Day Street Congregational Church, West Somerville, Mass.

HALL LAURIE CALHOUN.
Semitic Languages and History. — A.B. (*Kentucky Univ.*) 1892, Gr., *Coll. of the Bible, Ky.*, 1892, S.T.B. (*Yale Univ.*) 1902, A.M. (*Harvard Univ.*) 1903. — Stud., Harvard Divinity School, 1902–04.
Thesis: "The Remains of the Old Latin Translation of Leviticus."
Professor in Kentucky University, Lexington.

CHARLES HENRY CARTER.
English Philology. — A.B. (*Haverford Coll., Pa.*) 1900, A.M. (*ibid.*) 1901, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04.
Thesis: "Ipomedon."
Instructor in English, Syracuse University.

WINTHROP HOLT CHENERY.
Romance Philology. — S.B. (*Mass. Institute of Technology*) 1896, A.B. (*Harvard Univ.*) 1897, A.M. (*ibid.*) 1898. — Res. Gr. Stud., 1897–99.
Thesis: "Object Pronouns in Dependent Clauses: A Study in Old Spanish Word Order."
Continuing his studies in Paris.

HAROLD LOOMIS CLEASBY.
Classical Philology. — A.B. (*Trinity Coll., Conn.*) 1899, A.M. (*ibid.*) 1901, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04.
Thesis: "De Seneca Tragico Ovidi Imitatore."
Now studying Classical Philology at Berlin, as Parker Fellow.

EDWIN ALMIRON GREENLAW.
English Philology. — A.B. (*Northwestern Univ., Ill.*) 1897, A.M. (*ibid.*) 1898, A.M. (*Harvard Univ.*) 1903. — Res. Gr. Stud., 1902–03.
Thesis: "The Avowing of Arthur."
Instructor in English, Northwestern University.

CHESTER NOYES GREENOUGH.
English Philology. — A.B. 1898, A.M. 1899. — Res. Gr. Stud., 1898–99 and 1902–04.
Thesis: "Studies in the Development of Character Writing in England."
Now studying English Philology at London, as Rogers Fellow.

WILLIAM HENRY PAINE HATCH.
Classical Philology. — A.B. 1898, A.M. 1899, S.T.B. (*Episcopal Theol. School, Cambridge*) 1902. — Res. Gr. Stud., 1898–1903.
Thesis: "De Verborum *ἀλιτήριος, ἀλιτρός, ἀραῖος, ἐναγής, ἐνθύμιος, παλαμναῖος, προστρόπαιος* Usu apud Scriptores Graecos usque ad annum CCC ante Christum natum."
Rector, St. James's Church, Lake George, N. Y.

WILLIAM ALEXANDER ROBB KERR.
Romance Philology. — A.B. (*Univ. of Toronto, Ont.*) 1899, A.M. (*ibid.*) 1901, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–02 and 1903–04.
Thesis: "Platonic Love Theories in the Renaissance, with Special Regard to France."
Instructor in Romance Languages, Adelphi College, Brooklyn, N.Y.

TRUMAN MICHELSON.
Indic Philology. — A.B. 1902, A.M. 1903. — Res. Gr. Stud., 1902–04.
Thesis: "Linguistic Archaisms of the Rāmāyana."
Now studying Indic Philology at Leipsic, as Parker Fellow.

ARTHUR BECKWITH MYRICK.
Comparative Literature. — A.B. 1900, A.M. 1901. — Res. Gr. Stud., 1900–04.
Thesis: "Some Notes on Italian Borrowings from England in the Eighteenth Century."
Instructor in Romance Languages in the Academia Scientifico-litteraria, Milan, Italy.

ANDREW PAUL RAGGIO.
Romance Philology. — A.B. (*Univ. of Texas*) 1896, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04.
Thesis: "A Treatment of the Development from Popular Latin to Spanish of certain Consonant Groups ending in Y."
Lecturer on Italian and Old French, Bryn Mawr College.

ALPHONSO DE SALVIO.
Romance Philology. — A.B. (*Trinity Coll., Conn.*) 1899, A.B. (*Harvard Univ.*) 1902, A.M. (*ibid.*) 1904. — Res. Gr. Stud., 1901–04.
Thesis: "The Verse Endings and the Rhyme in the Divina Commedia."
Instructor in Romance Languages, Northwestern University.

Philosophy.

JAMES CARLETON BELL.
Psychology. — A.B. (*Denison Univ., O.*) 1896, A.M. (*Harvard Univ.*) 1903. — Res. Gr. Stud., 1902–04.
Thesis: "Reactions of the Crayfish to Sensory Stimuli"
Teacher of Latin, Boston Latin School.

FOSTER PARTRIDGE BOSWELL.
Psychology. — A.B. (*Hobart Coll., N.Y.*) 1901, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04.
Thesis: "Visual Irradiation."
Assistant in the Psychological Laboratory, University of Wisconsin.

Frank Carleton Doan.
Ethics. — Ph.B. (*Ohio State Univ.*) 1898, A.M. (*Harvard Univ.*) 1900. — Res. Gr. Stud., 1898–1900.
Thesis: "Pluralism and the Moral Life."
Professor of the Philosophy of Religion, Meadville Theological School.

Bernard Capen Ewer.
Logic. — A.B. (*Brown Univ., R.I.*) 1899, A.M. (*ibid.*) 1900. — Res. Gr. Stud., 1901–04.
Thesis: "The Psychology of Predication."
Teacher of Mathematics, Mount Hermon School.

Louis William Flaccus.
Ethics. — A.B. (*Washington and Jefferson Coll., Pa.*) 1900, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04.
Thesis: "Analysis of Moral Evaluation."
Honorary Fellow in Philosophy in Clark University.

William Ernest Hocking.
Metaphysics. — A.B. 1901, A.M. 1902. — Res. Gr. Stud., 1901–02 and 1903–04; Non-Res. Stud., 1902–03.
Thesis: "The Elementary Experience of Other Conscious Being in its Relations to the Elementary Experiences of Physical and Reflexive Objects."
Instructor in Philosophy, Andover Theological Seminary.

Percy Adams Hutchison.
Aesthetics. — A.B. 1898, A.M. 1902. — Res. Gr. Stud., 1901–04.
Thesis: "Logical and Psychological Problems in Poetic Criticism."
Assistant in Philosophy at this University.

Mortimer Phillips Mason.
Logic. — A.B. 1899, A.M. 1900. — Res. Gr. Stud., 1902–04.
Thesis: "The Problem of Psychology; or, The Relation of Criticism to the Concept of the Psychical."
Continuing his studies abroad.

History.

John Higginson Cabot, 2d.*
Italian History. — A.B. 1900, A.M. 1903. — Res. Gr. Stud., 1902–04.
Thesis: "Bonaparte and the Congress of Modena, or the Cispadane Confederation of 1796: The Beginning of the Risorgimento."
Instructor in History, Wellesley College.

Everett Kimball.
American History. — A.B. (*Amherst Coll.*) 1896, A.M. (*ibid.*) 1899, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04.
Thesis: "The Public Life of Joseph Dudley (1672–1715)."
Instructor in History, Smith College.

Guy Hall Roberts.
American History. — A.B. (*Univ. of Minnesota*) 1899, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900–03.
Thesis: "The Foreign Commerce of the United States during the Confederation."
Instructor in History and Political Science, Bowdoin College.

Henry Robinson Shipman.
Russian History. — A.B. (*Yale Univ., Conn.*) 1899, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900–04.
Thesis: "Russian Foreign Policy under Catherine I."
Instructor in History, Dartmouth College.

Political Science.

David Hutton Webster.
Sociology. — A.B. (*Leland Stanford Jr. Univ., Cal.*) 1896, A.M. (*ibid.*) 1897, A.M. (*Harvard Univ.*) 1903. — Res. Gr. Stud., 1902–04.
Thesis: "Primitive Social Control: A Study of Initiation Ceremonies and Secret Societies."
Assistant Professor of Economics, Williams College.

Mathematics.

Lewis Darwin Ames.
Analysis. — Litt.B. (*Univ. of Missouri*) 1899, A.B. (*Harvard Univ.*) 1901, A.M. (*ibid.*) 1902. — Res. Gr. Stud., 1900–03.
Thesis: "An Arithmetic Treatment of some Problems in Analysis Situs."
Instructor in Mathematics, University of Missouri.

Physics.

Edwin Plimpton Adams.
Electricity. — S.B. (*Beloit Coll., Wis.*) 1899, S.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1899–1901; Non-Res. Stud., 1901–03.
Thesis: I. "The Electromagnetic Effects of Moving Charged Spheres." II. "Water Radioactivity." III. "The Induced Radioactivity Due to Radium."
Instructor in Physics, Princeton University.

John L Hogg.
Molecular Physics. — A.B. (*Univ. of Toronto, Ont.*) 1899, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04.
Thesis: "Pressure Gauges for High Vacua."
Now continuing his studies at this University, as John Tyndall Scholar.

Chemistry.

Daniel Francis Calhane.
Organic Chemistry. — A.B. 1894, A.M. 1896. — Res. Gr. Stud., 1895–96 and 1897–1903.
Thesis: I. "The Action of Sodic Ethylate on certain Dibromdinitrobenzols, with some New Derivatives in this Class." II. "On the Manner of Oxidation to Quinones in the Case of Aromatic Diamines."
Instructor in Chemistry, Worcester Polytechnic Institute.

Henry Avery Carlton.
Organic Chemistry. — A.B. 1902, A.M. 1903. — Res. Gr. Stud., 1902–04.
Thesis: "On some Addition Compounds Derived from certain Aromatic Compounds."
In the Mallinckrodt Chemical Works, St. Louis, Mo.

Arthur Becket Lamb.
Physical Chemistry.—A.B. (*Tufts Coll.*) 1900, A.M. (*ibid.*) 1900, A.M. (*Harvard Univ.*) 1903, PH.D. (*Tufts Coll.*) 1904. — Res. Gr. Stud., 1902–04.
Thesis: "The Specific Heats of Aqueous Salt Solutions."
Continuing his studies at Leipsic, as Parker Fellow.

Philip Anderson Shaffer.
Physiological Chemistry. — A.B. (*West Virginia Univ.*) 1900. — Res. Gr. Stud., Feb. 1902–1904.
Thesis: "An Investigation of Metabolism in the Insane, together with a Discussion of Analytical Technique in Metabolism Experiments."
Continuing his studies at the Cornell Medical College, New York City.

Roger Clark Wells.
Inorganic and Physical Chemistry. — A.B. 1901. — Res. Gr. Stud., 1901–04.
Thesis: "The Atomic Weight of Sodium."
Instructor in Chemistry at this University.

Biology.

Glover Morrill Allen.
Zoölogy. — A.B. 1901, A.M. 1903. — Res. Gr. Stud., 1901–04.
Thesis: "The Heredity of Coat Color in Mice."
Secretary of the Boston Society of Natural History.

Albert Francis Blakeslee.
Botany.—A.B. (*Wesleyan Univ., Conn.*) 1896, A.M. (*Harvard Univ.*) 1900. — Res. Gr. Stud., 1899–1904.
Thesis: "Sexual Reproduction in the Mucorineae."
Continuing his studies in Europe.

Frederic Walton Carpenter.
Zoölogy. — S.B. (*New York Univ.*) 1899, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1900–04.
Thesis: "The Development of the Oculomotor Nerve, the Ciliary Ganglion, and the Abducent Nerve in the Chick."
Instructor in Zoölogy, University of Illinois.

James Brown Dandeno.
Botany. — A.B. (*Queen's Univ., Ont.*) 1895, A.M. (*Harvard Univ.*) 1899. — Res. Gr. Stud., 1898–99.
Thesis: "An Investigation of some of the Effects of Water and of certain Aqueous Solutions Applied to Foliage."
Assistant Professor of Botany, Michigan State Agricultural College.

Joseph Horace Faull.
Botany.— A.B. (*Univ. of Toronto, Ont.*) 1898. — Res. Gr. Stud., 1901–02.
Thesis: "The Development of the Ascus and the Formation of the Spores in the Ascomycetes."
Lecturer in Botany, University of Toronto.

Robert Greenleaf Leavitt.
Botany. — A.B. 1889, A.M. 1898. — Res. Gr. Stud., 1897–99.
Thesis: "Trichomes of the Root in Vascular Cryptogams and Angiosperms."
Engaged in botanical research at the Ames Botanical Laboratory, North Easton, Mass.

Grant Smith.
Zoölogy. — S.B. (*Univ. of Wisconsin*) 1897, S.M. (*ibid.*) 1899. — Res. Gr. Stud., 1901–04.
Thesis: "On the Eyes of certain Pulmonate Gastropods, with Special Reference to the Neurofibrillae in Limax Maximus."
Teacher of Biology, Chicago Normal School.

James Jacob Wolfe.
Botany. — A.B. (*Wofford Coll., S.C.*) 1896. — Res. Gr. Stud., 1902–04.
Thesis: "Cytological Studies on Nemalion."
Adjunct Professor of Biology, Trinity College, N.C.

Geology.

James Mackintosh Bell.
Economic Geology. — A.M. (*Queen's Univ., Ont.*) 1899. — Res. Gr. Stud., 1902–04.
Thesis: "Report on the Michipicoten Iron Range."
Geologist to the Government of New Zealand.

Philip Sidney Smith.
General Geology. — A.B. 1899, A.M. 1900. — Res. Gr. Stud., 1899–1900 and 1901–02.
Thesis: "The Copper Sulphide Deposits of Orange County, Vermont."
Instructor in Geology at this University.

Anthropology.

Alfred Marston Tozzer.
Ethnology. — A.B. 1900, A.M. 1901. — Res. Gr. Stud., 1900–01.
Thesis: "A Comparative Study of the Mayas and the Lacandones."
Fellow for Indian Archaeology of the Archaeological Institute of America, Peabody Museum, Cambridge, Mass.

The Doctor of Science was: —

Geology.

Henry Cook Boynton.
Metallurgy and Metallography. — A.B. 1900, S.M. 1901. — Res. Gr. Stud., 1900–02.
Thesis: "An Investigation into the Relation between the Treatment, Structure, and Properties of Steel."
Instructor in Metallurgy and Metallography at this University.

Of the forty-seven Doctors, thirty-seven — or three-fourths of the whole number — are known to be now engaged each in the actual pursuit of his profession. Twenty-six are teachers in colleges or universities, five of them having the rank of professor; of the seventeen instructors, three are in the service of this University; of the two lecturers and two assistants, one assistant is at this University. Four are connected with secondary schools. Two are carrying on research in the line of their profession, in botany and in archaeology, respectively. Two are pastors of churches; one is an expert in industrial chemistry; one is an official government geologist (in New Zealand); one is secretary of a scientific institution. The remaining ten are students — eight in Europe (including five travelling fellows) and two in the United States.

The degree of Doctor of Philosophy is based on that of Bachelor of Arts, or its equivalent, or on that of Master of Arts. Hence all the Doctors held degrees in Arts except two, who were Bachelors and Masters of Science. Thirty-nine Doctors held the degree of Master of Arts; six held the degree of Bachelor of Arts, but not that of Master of Arts. Thirty-seven were Harvard Masters of Arts; of these seventeen were also Harvard Bachelors of Arts. Of the other twenty, seven were also Masters of Arts elsewhere, and all but two were Bachelors of Arts elsewhere, one of them being a Bachelor of Philosophy, the other a Bachelor of Science. Only one Harvard man had no degree but Bachelor of Arts; another had only Master of Science, with Bachelor of Science elsewhere; another was a Harvard Bachelor of Arts and Master of Science. Three of the candidates, besides holding both degrees in Arts, had the degree of Bachelor of Divinity. On the other hand, five only had no degree except Bachelor of Arts, one from Harvard, four elsewhere, and one had only the degree of Master of Arts elsewhere. Of the forty-seven candidates, fifteen only were Harvard Bachelors of Arts who had not previously graduated elsewhere. About two-thirds, then, of the candidates for the degree of Doctor of Philosophy were men whose undergraduate work had been mainly done before they entered Harvard.

In the case of twenty candidates, six or more years had elapsed since the candidate had received his first degree in Arts or Science. Of the remaining twenty-seven, twelve had been out of college for five years, nine for four years, four for three years, two for two years only.

The period of resident study of the Doctors of Philosophy varied from one year (four candidates) to seven years (one candidate). Four candidates were in residence for one year only, eighteen for two years, eighteen for three years, three for four years, and two for five years. Of the four who had had one year only of residence, all had previously done approved graduate work, one during his Senior year in Harvard College, three at other Universities. The Divisions or Departments in which the degree was conferred after one year of resident study were Botany (two candidates), English, and Anthropology (one each); those after two years of resident study were Philosophy (four), Geology (three), Semitics, Romance Philology, Chemistry, and Botany (with two each), and Indic Philology, History, Political Science, and Physics (with one each). The Departments in which three years were found necessary by certain candidates were Philosophy (with four men), Classics, English, Romance Philology, History, Zoölogy, and Chemistry (with two each), and Mathematics and Physics (with one each). The three candidates who devoted four years each to resident study were in Comparative Literature, History, and Zoölogy. The five-year men were in Classics and Botany, and the seven-year man in Chemistry.

The average period of resident study for these candidates proves to be somewhat less than three years. If, however, we reckon in with this the time spent in graduate study at other universities by most of the shorter term candidates, the average length of time given to special preparation for the Doctor's degree will be a little more than three years. The candidates in 1904 show a lower average than has been usual in the past.

Tables XIV and XV explain themselves. In 1904, fifty-seven Graduate Students secured the degree of Master of Arts whom we may regard as normal Masters of Arts. They had continued their studies immediately after receiving the Bachelor's degree, or after an interval of not more than one year. The average age of these men was about twenty-three.

TABLE XIV. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREES OF MASTER OF ARTS, MASTER OF SCIENCE, AND DOCTOR OF PHILOSOPHY: 1904.*

	19	20	21	22	23	24	25	26	27	28–34	35–39	40 or over	Total.
A.M.'s .	1	3	10	12	16	16	15	4	4	24	5	3	113
S.M.'s .	. .	. .	. .	. .	. .	2	1	. .	. .	. .	. .	. . .	3
Ph.D.'s .	. .	. .	. .	. .	. .	4	4	7	5	22	2	. . .	44

---

* Men recommended for "as of" degrees are not included.

Table XV. — Age of Graduate Students recommended for the Degree of Doctor of Philosophy: 1897–1904.

	22	23	24	25	26	27	28 or over	Average age of men 27 or under.	Percentage of men 28 or older.
1897	. .	. .	3	1	4	2	15	25.5	60
1898	1	. .	1	4	2	2	15	25.2	60
1899	1	4	2	3	2	1	8	24.3	38
1900	. .	2	3	4	2	6	18	25.4	51
1901	. .	. .	1	3	5	3	17	25.8	59
1902	. .	1	2	3	4	2	16	25.3	57
1903	. .	. .	2	4	3	3	16	25.6	58
1904	. .	. .	4	4	7	5	24	26.1	55

The "normal" Doctors should be about three years older. A glance at Table XV shows that their average age was actually only a little over twenty-six.

The very large proportion of oldish men — twenty-eight years of age or more — who come up for the Master's degree (fifty-five per cent.) deserves comment. For various reasons, often financial, these men have had to postpone the attainment of their degree to an age when men in other professions have already become well established. Ordinarily, however, much of the intermediate time has been spent in successful teaching. The desire at once for higher attainments in their specialty and for advancement in their profession is the motive that leads these teachers to interrupt their work of teaching, often at a great sacrifice, and to come to the University.

FELLOWSHIPS AND SCHOLARSHIPS.

Recommendations to fellowships and scholarships in the Graduate School are made by the Faculty of Arts and Sciences on the nomination of its Committee on Fellowships and other Aids for Graduate Students.

Ninety-three appointments of this class were held by students in the Graduate School during 1903–04, thirty-three fellowships and sixty scholarships. With the fellowships are included the John Harvard Fellowships without stipend (seven in 1903–04). Fourteen of the fellowships, including three of the John Harvard Fellowships, were held as travelling fellowships by Non-Resident Students, all of whom studied abroad — in Germany (four), in England (three), in France and in Italy (two), in Holland, Greece, and India (one in each). Nineteen of the fellowships, including four of the John Harvard Fellowships, and all the scholarships were held by Resident Students.

In the current year, 1904–05, appointments have been made to twenty-eight fellowships and sixty-six scholarships.

The names of the holders of fellowships for last year and for the current year follow.

Harris Fellowship (1868).

1903-04.	**1904-05.**
Andrew Runni Anderson. A.B. (*Univ. of Wisconsin*) 1900, PH.D. (Classical Philology) 1903. — Res. Gr. Stud., 1901–03. — Non-Res. Stud., 1903–04. — Thayer Scholar, 1901–02; Shattuck Scholar, 1902–03. — Student of Classical Philology, at Berlin. Instructor in Greek, University of Wisconsin.	Elijah Swift. A.B. 1903, A.M. 1904. — Res. Gr. Stud., 1903-04. — Shattuck Scholar, 1903–04. Student of Mathematics, at Göttingen.

Rogers Fellowships (1869).

Harold de Wolf Fuller. *Reappointed.* A.B. (*Adelbert Coll. of Western Reserve Univ., O.*) 1897, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1900, PH.D. (English Philology) 1902. — Res. Gr. Stud., 1897–Feb. 1899, and Feb. 1900–02; Non-Res. Stud., 1902–04. — University Scholar, 1900–01; Christopher M. Weld Scholar, 1901–02. — Student of English Philology and Comparative Literature, at Leyden. Instructor in English at this University.	Chester Noyes Greenough. (See Edward Austin Fellowships, 1903–04.)
Roland Greene Usher. *Reappointed.* A.B. 1901, A.M. 1902. — Res. Gr. Stud., 1901–02; Non-Res. Stud., 1902–04. — Ricardo Prize Scholar, 1901–02. — Student of History, at Oxford and Cambridge, England. Assistant in History at this University.	George Randall Lewis. (See Henry Lee Memorial Fellowship, 1903-04.)

Parker Fellowships (1873).

William Frederick Boos. A.B. 1894, PH.D. (*Univ. of Heidelberg, Germany*) 1896, M.D. (*Harvard Univ.*) 1901. — Student of Chemistry, at Strasburg. Continuing his studies in Germany.	Harold Loomis Cleasby. A.B. (*Trinity Coll., Conn.*) 1899, A.M. (*ibid.*) 1901, A.M. (*Harvard Univ.*) 1902, PH.D. (Classical Philology) 1904. — Res. Gr. Stud., 1901–04. — Christopher M. Weld Scholar, 1903–04. Student of Classical Philology, at Berlin.
Earnest Cary. A.B. (*Gates Coll., Neb.*) 1898, A.B. (*Harvard Univ.*) 1900, A.M. (*ibid.*) 1901, PH.D. (Classical Philology) 1903. — Res. Gr. Stud., 1900–03; Non-Res. Stud., 1903–04. — Thayer Scholar, 1900–01; Shattuck Scholar, 1901–02; Edward Austin Fellow, 1902–03. — Student of Classical Philology, in Germany. Private secretary in Cambridge, Mass.	Arthur Becket Lamb. (See Edward Austin Fellowships, 1903–04.)
David Raymond Curtiss. A.B. (*Univ. of California*) 1899, A.M. (*ibid.*) 1901, PH.D. (Mathematics) 1903. — Res. Gr. Stud., 1901–03; Non-Res. Stud., 1903–04. — Shattuck Scholar, 1901–02; Christopher M. Weld Scholar, 1902–03. — Student of Mathematics, at Paris. Instructor in Mathematics, Yale University.	Truman Michelson. A.B. 1902, A.M. 1903, PH.D. (Indic Philology) 1904. — Res. Gr. Stud., 1902–04. — George and Martha Derby Scholar, 1902–03; James Savage Scholar, 1903–04. Student of Indic Philology, at Leipsic.

1903-04. **1904-05.**

John Thornton Kirkland Fellowship (1873).

John William Bradshaw.
A.B. (*Univ. of Michigan*) 1900, A.M. (*Harvard Univ.*) 1902, PH.D. (*Univ. of Strasburg, Germany*) 1904. — Res. Gr. Stud., 1900–02; Non-Res. Stud., 1902–04. — Leverett Saltonstall Scholar, 1901–02. — Parker Fellow, 1902–03. — Student of Mathematics, at Strasburg.
Instructor in Mathematics, University of Michigan.

Richmond Laurin Hawkins.
A.B. (*Univ. of Missouri*) 1899, A.M. (*ibid.*) 1900, A.B. (*Harvard Univ.*) 1903.
Student of Romance Philology, in Paris.

James Walker Fellowship (1881).

Ray Madding McConnell.
A.B. (*Southern Univ., Ala.*) 1899, S.T.B. (*Vanderbilt Univ., Tenn.*) 1901, A.M. (*Harvard Univ.*) 1902. — Gr. Div. Stud., 1901–03; Non-Res. Stud., 1903–04. — Student of Philosophy, at Berlin.
Continuing his studies in Paris, as Henry Bromfield Rogers Memorial Fellow.

Arthur Stone Dewing.
A.B. 1902, A.M. 1903. — Res. Gr. Stud., 1902–03. — Assistant in Philosophy, 1903–04.
Student of Philosophy, at Munich.

John Tyndall Scholarship (1885).

John L Hogg.
A.B. (*Univ. of Toronto, Ont.*) 1899, A.M. (*Harvard Univ.*) 1902, PH.D. (Physics) 1904. — Res. Gr. Stud., 1901–04. — University Scholar, 1901–02; Whiting Fellow, 1902–03. — Student of Physics, at this University.
Continuing his studies at this University, as John Tyndall Scholar.

John L Hogg.
Reappointed.

Robert Treat Paine Fellowship (1887).

Edwin DeTurck Bechtel.
A.B. 1903, A.M. 1904. — Res. Gr. Stud., 1903–04. — Student of Social Science, at this University.
Continuing his studies in Europe, as Robert Treat Paine Fellow.

Frank Harold Lemont.
A.B. 1903. — Res. Gr. Stud., 1903–04. — Student of Social Science, at this University.
Employed in a bank in Wisconsin.

Edwin DeTurck Bechtel.
Reappointed.

Henry Lee Memorial Fellowship (1889).

George Randall Lewis.
A.B. 1902. — Res. Gr. Stud., 1902–04. — Student of Economics, at this University.
Continuing his studies in London, as Rogers Fellow.

William Hyde Price.
A.B. (*Tufts Coll.*) 1901, A.M. (*ibid.*) 1901, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901–04. — Thayer Scholar, 1902–03.
Student of Economics, in London.

Ozias Goodwin Memorial Fellowship (1889).

Walter Harold Claflin.
A.B. 1902, A.M. 1903. — Res. Gr. Stud., 1902–04. — Thayer Scholar, 1902–03. — Student of History, at this University.
Continuing his studies in France.

William Chauncey Rice.
A.B. (*Wesleyan Univ., Conn.*) 1901, A.M. (*Yale Univ., Conn.*) 1902. — Res. Gr. Stud., 1902–04. — Thayer Scholar, 1903–04. — Assistant in Government, 1903–04.
Student of History and Government and Assistant in Government, at this University.

Henry Bromfield Rogers Memorial Fellowship (1889).

1903-04.	1904-05.
CARLETON AMES WHEELER. A.B. 1899, A.M. 1904. — Res. Gr. Stud., 1903-04. — Student of Philosophy, at this University. Junior, Harvard Divinity School.	RAY MADDING MCCONNELL. (See James Walker Fellowship, 1903-04.)

Hemenway Fellowship (1891).

(No appointment for 1903-04.)	VILHJÁLMUR STEFÁNSSON. A.B. (*State Univ. of Iowa*) 1903. — Special Div. Stud., 1903-04. Student of Anthropology, at this University.

John Harvard Fellowships (1895).

JAMES MACKINTOSH BELL. A.M. (*Queen's Univ., Ont.*) 1899, PH.D. (Geology) 1904. — Res. Gr. Stud., 1902-04. — Student of Geology, at this University. Geologist to the Government of New Zealand.	ROBERT BELL MICHELL. (See Edward Austin Fellowships, 1903-04.)
HOWARD LANE BLACKWELL. A.B. 1899, A.M. 1900. — Res. Gr. Stud., 1899-1900 and 1901-04. — Student of Physics, at this University. Continuing his studies at this University.	
FRANCIS REEVE COPE, JR. A.B. (*Haverford Coll., Pa.*) 1900, A.B. (*Harvard Univ.*) 1901, A.M. (*ibid.*) 1902. — Res. Gr. Stud., 1901-02; Non-Res. Stud., 1902-04. — Robert Treat Paine Fellow, 1902-03. — Student of Social Science, in Europe. Assistant Secretary, Civil Service Reform Association of Pennsylvania, Philadelphia.	
LOUIS WILLIAM FLACCUS. A.B. (*Washington and Jefferson Coll., Pa.*) 1900, A.M. (*Harvard Univ.*) 1902, PH.D. (Philosophy) 1904. — Res. Gr. Stud., 1901-04. — Student of Philosophy, at this University. Honorary Fellow in Philosophy at Clark University.	
CONYERS READ. A.B. 1903, A.M. 1904. — Non-Res. Stud., 1903-04. — Student of History, at Oxford. Continuing his studies at Oxford.	
WILLIAM HENRY ROEVER. S.B. (*Washington Univ., Mo.*) 1897, A.M. (*Harvard Univ.*) 1904. — Res. Gr. Stud., 1897-98, 1901-02, and 1903-04. — Shattuck Scholar, 1897-98. — Instructor in Mathematics, 1902-03. — Student of Mathematics, at this University. Continuing his studies at this University, as John Harvard Fellow.	WILLIAM HENRY ROEVER. *Reappointed.*
GEORGE WALLACE UMPHREY. A.B. (*Univ. of Toronto, Ont.*) 1899, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-01; Non-Res. Stud., 1903-04. — Student of Romance Languages at Paris, and Fellow of the Ministry of Public Instruction of the French Republic. Continuing his studies at this University, as Edward Austin Fellow.	

Whiting Fellowships (1895).

JOHN MEAD ADAMS. A.B. 1903. — Res. Gr. Stud., 1903-04. — Student of Physics, at this University. Second-year Graduate Student and Assistant in Physics, at this University.	PERCY WILLIAMS BRIDGMAN. A.B. 1904. Student of Physics, at this University.

1903-04.	1904-05.
HARVEY NATHANIEL DAVIS. *Reappointed.* A.B. (*Brown Univ., R.I.*) 1901, A.M. (*ibid.*) 1902, A.M. (*Harvard Univ.*) 1903. — Res. Gr. Stud., 1902-04. — Student of Physics, at this University. Continuing his studies at this University, as Whiting Fellow.	HARVEY NATHANIEL DAVIS. *Reappointed.*
ALPHEUS WILSON SMITH. A.B. (*West Virginia Univ.*) 1900, A.M. (*Harvard Univ.*) 1903. — Res. Gr. Stud., 1902-04. — Student of Physics, at this University. Continuing his studies at this University, as Whiting Fellow.	ALPHEUS WILSON SMITH. *Reappointed.*

South End House Fellowship (1900).

ALBERT BENEDICT WOLFE. *Reappointed.* A.B. 1902, A.M. 1903. — Res. Gr. Stud., 1902-04. — Student of Sociology, at this University. Instructor in History, McKinley High School, St. Louis, Mo.	JOHN DANIELS. A.B. 1903, A.M. 1904. — Res. Gr. Stud., 1903-04. Student of Sociology, at this University.

Charles Eliot Norton Fellowship (1900).

FRITZ SAGE DARROW. A.B. 1903, A.M. 1904. — Non-Res. Stud., 1903-04. — Student of Classical Archaeology in Athens. Continuing his studies at this University.	CHANDLER RATHFON POST. A.B. 1904. Student of Classical Archaeology in Athens.

Edward Austin Fellowships (1900).

FREDERIC WALTON CARPENTER. S.B. (*New York Univ.*) 1899, A.M. (*Harvard Univ.*) 1902, PH.D. (Biology) 1904. — Res. Gr. Stud., 1900-04. — Virginia Barret Gibbs Scholar, 1900-01. — Assistant in Zoölogy, 1901-03. — Student of Zoölogy, at this University. Instructor in Zoölogy, University of Illinois.	MAULSBY WILLETT BLACKMAN. A.B. (*Univ. of Kansas*) 1901, A.M. (*ibid.*) 1902. Student of Zoölogy, at this University.
EMERSON DAVID FITE. A.B. (*Yale Univ., Conn.*) 1897. — Res. Gr. Stud., 1901-04. — Townsend Scholar, 1901-02. — Ozias Goodwin Memorial Fellow, 1902-03. — Student of History at this University. Fourth-year Graduate Student and Austin Teaching Fellow in Government at this University.	ARTHUR STANLEY PEASE. A.B. 1902, A.M. 1903. — Res. Gr. Stud., 1902-04. — Charles Haven Goodwin Scholar, 1902-03. Student of Classical Philology at this University.
CHESTER NOYES GREENOUGH. A.B. 1898, A.M. 1899, PH.D. (English Philology) 1904 — Res. Gr. Stud., 1898-99 and 1902-04. — Shattuck Scholar, 1902-03. — Instructor in English, 1901-02. — Student of English, at this University. Continuing his studies in London, as Rogers Fellow.	HERBERT THOMAS POLAND. A.B. 1903, A.M. 1904. — Res. Gr. Stud., 1903-04. Student of English, at this University.
ARTHUR BECKET LAMB. A.B. (*Tufts Coll.*) 1900, A.M. (*ibid.*) 1900, A.M. (*Harvard Univ.*) 1903, PH.D. (*Tufts Coll.*) 1904, PH.D. (Chemistry) 1904. — Res. Gr. Stud., 1902-04. — Student of Chemistry, at this University. Continuing his studies at Leipsic, as Rogers Fellow.	GEORGE WALLACE UMPHREY. (See John Harvard Fellowships, 1903-04.)

1903–04.	1904–05.
Travelling Fellowship in Indic Philology (1902–04).	
DAVID BRAINERD SPOONER. *Reappointed.* A.B. (*Leland Stanford Jr. Univ., Cal.*) 1899. — Non-Resident Stud., 1902–04. — Student of Indic Philology, at Benares. Continuing his studies at this University, as Christopher M. Weld Scholar.	
Nelson Robinson Jr. Fellowship (1902).	
LEROY PEARL BURNHAM. S.B. 1902, S.M. 1903. — Res. Gr. Stud., 1902–03; Non-Res. Stud., 1903–04. — Austin Scholar in Architecture, 1902–03. — Student of Architecture, in Europe. Continuing his studies in Europe as Julia Amory Appleton Fellow.	CHARLES ROBERT WAIT. S.B. 1903, S.M. 1904. — Res. Gr. Stud., 1903–04. — Austin Scholar in Architecture, 1903–04. Student of Architecture, in Europe.
Fellowship of the Cercle Français de l'Université Harvard (1903).	
ROBERT CHARLES DOMINIQUE MARIE PIERRE DUPOUEY. Agrégé-des-lettres (*Univ. of Paris, France*) 1903. — Res. Gr. Stud., 1903–04. — Student of English, at this University. Instructor in French, University of California.	HENRI BAULIG. Bach.-ès-lettres (*Univ. of Paris, France* 1895, Lic.-ès-lettres (*ibid.*) 1900. Student of Geography, at this University.
Julia Amory Appleton Fellowship (1904).	
	LEROY PEARL BURNHAM. (See Nelson Robinson Jr. Fellowship, 1903–04.)

The George W. Dillaway Fellowship, with a stipend of two hundred dollars, is not included in this list, since though nominally a fellowship it is in fact of the same rank as the scholarships.

The Faculty regards the fellowships as useful for two distinct classes of students: first, for men who have ordinarily received the Doctor's degree and wish to continue, for a year or two, special studies or researches before taking up their professional work; and secondly, for men of promise, but younger than the former class from an academic point of view, whom the stipend of the fellowship will enable to carry on advanced studies, normally for a higher degree either here or at some other university. Of the thirty-seven fellows in 1903–04, five only appear to belong to the former class; four of these, when they went abroad, held the Harvard degree of Doctor of Philosophy, and the fifth, that of Doctor of Medicine and Doctor of Philosophy (Heidelberg). Of the second class, seven secured the degree of Doctor of Philosophy at the close of the year, all at Harvard, except one who took it at a German university. Of the remaining twenty-one, three only had no Harvard degree, two being Bachelors of Arts of Yale and Leland Stanford respectively, and the third, an Agrégé-des-lettres of Paris. The remaining eighteen had these Harvard degrees: Bachelor of Arts only, three; Master of Arts only, three; Bachelor of Arts and Master of Arts, six; Bachelor of Science and Master of Science, one; the remaining five became Masters of Arts at the close of the year.

Of the thirty-three holders of fellowships in 1903–04, nine are teaching in universities: four here, one each at California, Illinois, Michigan, Wisconsin, and Yale. One is an instructor in a St. Louis High School. One is geologist to the government of New Zealand, two are in secretarial work, one is in a bank. Nineteen of the fellows, besides two of the four who are teaching at Harvard, are continuing their studies, nine of them abroad, of whom six hold travelling fellowships from this University; nine are resident students at this University, five holding fellowships and one a scholarship.

The following table (XVI) gives the usual statistics relative to the applications and appointments for the three successive years 1902–03, 1903–04, and 1904–05: —

TABLE XVI. — FELLOWSHIPS AND SCHOLARSHIPS (1902–05).

1. *Applications and Appointments.*

	1902–03.		1903–04.		1904–05.	
Spring applicants for reappointment or promotion	46		42		51	
Spring applicants for a first appointment	210		202		207	
Later applicants	57	313	60	304	58	316
Appointed to fellowships	21		23		22	
Appointed to scholarships	50		55		59	
Appointed instructors, teaching fellows, or assistants	28	99	23	101	22	103
Deduct for repetitions		4		3		4
		95		98		99
Entered or continued in the Graduate School without receiving any of the above-named appointments	55		62		73	
Entered undergraduate classes of Harvard College	8		0		0	
Entered other Departments of the University	5	68	3	65	2	75
Applicants who were at the University in the year following their applications		163		163		174
Applicants not at the University in that year		150		141		142
		313		304		316

2. *Classification of Applicants and Appointees.*

	1902–03.		1903–04.		1904–05.	
	Applicants.	Appointees.	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology	115	22	118	24	138	23
Students of Philosophy, History, or Political Science	101	21	100	23	92	29
Students of Mathematics, Physics, and Chemistry	55	17	52	19	51	17
Students of Natural History	34	8	30	9	28	8
Students of other branches, or unclassified	8	3	4	3	7	4
	313	71	304	78	316	81
Students in the Graduate School	80	41	93	41	108	42
Students in Harvard College	35	6	42	16	25	6
Students in other Departments of the University	5	1	7	2	11	5
Former students in some Department of the University	36	5	33	9	23	5
Persons never previously members of the University	157	18	129	10	149	23
	313	71	304	78	316	81
Harvard Bachelors of Arts or Science, not previously graduated elsewhere	23	9	32	16	32	12
Harvard Bachelors of Arts or Science, previously graduated elsewhere	23	9	11	2	13	2
Graduates of other institutions, not Harvard Bachelors of Arts or Science	210	46	204	44	219	56
Undergraduates of Harvard College or Lawrence Scientific School, not already graduated elsewhere	26	7	36	14	28	9
Undergraduates of other institutions and other non-graduates	31	0	21	2	24	2
	313	71	304	78	316	81

Of the applicants in 1904 for appointments to be held in the current year (1904–05), about fifty-five per cent. came to the University or remained in it. Of those who were disappointed, thirty-four per cent. are nevertheless students in the University in 1904–05; last year the proportion was thirty-two per cent.; year before last, thirty-one per cent.

Of the whole number of applicants, one in three was successful, though in a few cases applicants for scholarships or fellowships received instead assistantships or instructorships (including teaching fellowships). As usual, the applicants in philology, philosophy, history, and economics were about three times as numerous as those in science. Of the applicants who received scholarships or fellowships, in philology one in six was successful, in philosophy, history, and economics one in three, in mathematics, physics, and chemistry one in three, and in geology and biology one in four. Of the applicants who had previously been in the School, nearly one-half were successful. Of those who had never been in the University, nearly one in seven was successful. Of applicants who had not been in the School, but were students in Harvard College or had been students in some other department of the University, about one in five was successful. Of Harvard Bachelors of Arts, about one in three was successful, while of the large number that held no first degree from Harvard University, more than one in four were successful. Statistics continue to show that it is an advantage to the applicant to hold the Harvard degree of Bachelor, or to have studied at this University. On the other hand, the large number of appointees outside these classes (in 1904–05, fifty-eight appointments out of two hundred and forty-three applicants of this class) shows that the stranger is by no means discriminated against.

INSTRUCTORSHIPS, TEACHING FELLOWSHIPS, AND ASSISTANTSHIPS.

Several members of the Graduate School, besides carrying on their studies, serve the University as salaried teachers or assistants under the Faculty of Arts and Sciences, by regular appointment of the Corporation. The amount of their work as students varies from a half-course, which is technically one-eighth of full work, to four courses or more. There were in 1903–04 sixty-nine such persons: seven of them were Instructors, fifteen were Austin Teaching Fellows, and forty-seven were Assistants. In the current year there are (in November, 1904) fifty-one such persons: five Instructors, twenty Austin Teaching Fellows, and twenty-six Assistants. Besides these twenty Austin Teaching Fellows, there are three others who are registered as members of the Lawrence Scientific School, one in Harvard College, and six who are not students in the University.

Of the four hundred and twenty-seven members of the School in 1903–04, one hundred and fifty-five — nearly thirty-seven per cent. (as against forty-three per cent. in 1902–03; forty per cent. in 1901–02; and thirty-three per cent. in 1900–01) — received stipends, either as teachers, assistants, fellows, or scholars. Furthermore, other members of the School, as well as some of these, held paid proctorships, parietal or examination.

NEW FELLOWSHIPS AND SCHOLARSHIPS.

One new fellowship and one scholarship for students in the Graduate School were founded in 1903–04.

Julia Amory Appleton Travelling Fellowship in Architecture. — Mr. Charles Follen McKim, of New York, has founded, in the Department of Architecture, in honor of his wife, Julia Amory Appleton McKim, a travelling fellowship, to be called "The Julia Amory Appleton Fellowship in Architecture." The stipend is one thousand dollars. It is expected that the Appleton Fellowship will be offered in alternate years, and that both the Appleton and Robinson Fellowships will ordinarily be tenable for two years.

The Scholarship of the Harvard Club of Louisiana. — This scholarship, with an income of about two hundred and fifty dollars, is maintained for the present by the Harvard Club of Louisiana. It is awarded to a graduate of Tulane University who wishes to pursue advanced non-professional studies at Harvard University. The appointment is made by the President and Faculty of Tulane University.

The Association of American Universities, to the annual meeting of which reference has regularly been made in these reports, met for its fifth annual conference on February 18–20, 1904, at Yale University, President Eliot representing this University. There were papers on "Uniformity of University Statistics," "The Actual and Proper Lines of Distinction between College and University Work," "The Administration, Financial Support and Distribution of University Publications, including Journals and Doctor's Dissertations," and "Are the Degrees of Bachelor of Science, Bachelor of Philosophy, and Bachelor of Letters to be Preserved or to be Merged in the Degree of Bachelor of Arts?"

The Philosophical Faculty of the University of Berlin adopted a regulation, on July 18 of the present year, by which holders of the Bachelor's degree from any American university are regarded as the equivalent of holders of a leaving-certificate from a German gymnasium. It also provided that credit should hereafter be given for graduate work to candidates for the degree of Doctor of Philosophy at Berlin who had pursued suitable studies at either of the universities that constitute this Association. Three semesters, however, of resident study at some German university are required as a minimum. The writer has been asked to act as the organ of communication between the Berlin Faculty and the Association.

The Association now consists of the following fourteen universities: Harvard, Clark, Yale, Columbia, Cornell, Princeton, Pennsylvania, Johns Hopkins, The Catholic University of America, Michigan, Chicago, Wisconsin, California, Leland Stanford Jr.

Within the last three years, the Faculty of Arts and Sciences, on the recommendation of the Administrative Board of the Graduate School and after much discussion, has upon three important matters taken action which at once gives the normal work of Graduate Students a distinctive character, and will improve it in breadth and quality, especially for men in their first year. These measures were, first, the abolition of the degree of Bachelor of Arts in the Graduate School; and, second, the regulations by which men from other colleges are admitted more simply and rationally, though not necessarily more easily, to candidacy for the higher degrees, and by which also the preparation for the degree of Master of Arts for all students is made more consistent, more carefully considered, and is better supervised. The third measure, which was enacted in the current academic year, provides that all work for the degree of Master of Arts must be done by persons registered in the Graduate School or in some other graduate department of the University (the professional schools of Law, Medicine, and Divinity). Undergraduates, however, who have completed, or completed within one course, the requirements for the degree of Bachelor of Arts, but have not yet received the degree, may be admitted to registration in the Graduate School, but only as candidates for the degree of Master of Arts.

The formal opening meeting of the School for the current year (1904–05) was held on Thursday evening, October 6, in the Faculty Room. The principal address was given by Professor Eduard Sievers, of the University of Leipsic, on "Voice Pitch and Cadence as Criteria in Textual Criticism." Briefer addresses were made by President Eliot, Professor Adolf Harnack, of the University of Berlin, Dr. Pierre Janet, of the Collége de France, Professor E. A. Sonnenschein, of the University of Birmingham, and Mr. H. N. Davis, President of the Graduate Club. These were followed by a reception. Besides the speakers from Europe there were present six or seven other professors from foreign universities — Oxford, Copenhagen, Kiel, Leipsic, and Heidelberg. These scholars were visiting in Cambridge, being homeward bound from the International Congress of Arts and Sciences which had been held in September at St. Louis.

JOHN HENRY WRIGHT, *Dean*.

THE DIVINITY SCHOOL.

To the President of the University: —

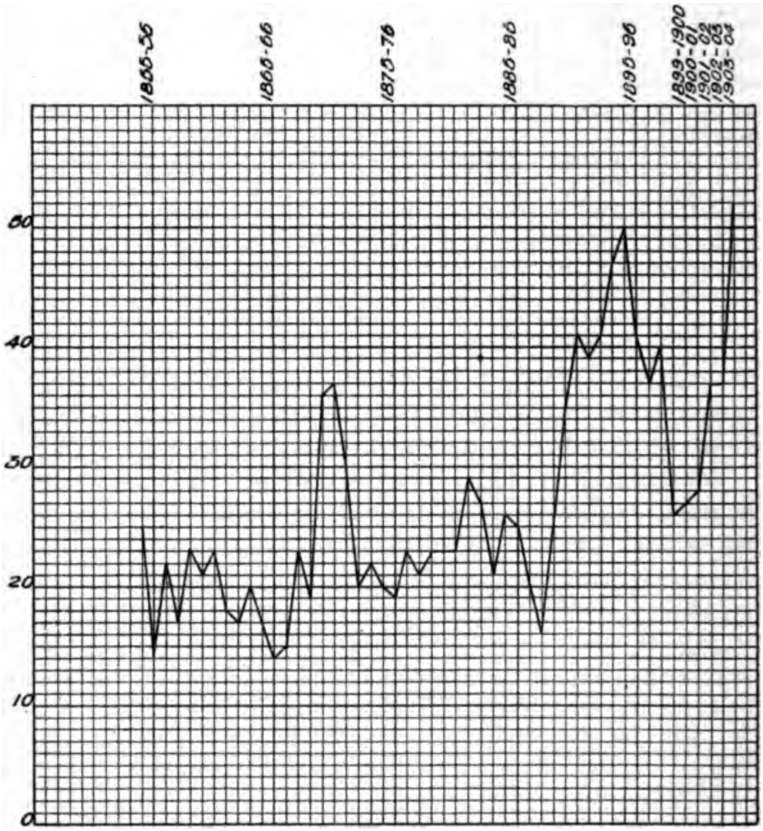
Sir, — I have the honor to present the following report concerning the Divinity School for the year 1903–04.

The year has been marked by a maximum of production in the work of the School. The entire teaching staff has been on duty during the year (eight professors, two assistant professors, two instructors). The courses given have exceeded both in number and variety the list of any previous year.

History of Religions	1½	courses.
Old Testament	9	"
New Testament	5	"
Church History	4	"
Theology	4½	"
Ethics	3	"
Homiletics	3	"
Elocution	1½	"

The number of students registered, though still modest, was the largest in the history of the School; the movement of attendance during the last fifty years being indicated in the following diagram.

This diagram is suggestive of the many vicissitudes which the School has experienced, and the successive problems of administration which it has met. For fourteen years, from 1854 to 1868, its course was even and sluggish, the attendance varying from 25 to 15. In 1869 a sudden freshet occurred through the break-up of a school for ministers in Boston, directed by the Rev. George H. Hepworth. Though the Boston school had required no academic preparation, the Harvard School accepted this overflow, and the numbers rose abruptly to 37. This artificial rise of level could not be long maintained by a University school, and, as soon as this new group had graduated, the School subsided for another ten years to its meagre attendance of from 20 to 29. During these years, however, the Faculty was enlarged and made representative of various communions, new endowment was received, and the intention to create an undenominational school was frankly announced. Conditions seemed favorable for growth, when — as a part of these reforms — the requirement of the A. B. degree, as antecedent to the B. D. degree, was enforced in 1886. This action promptly reduced attendance, and in 1887 the number dropped to 16. The quick reaction from this loss indicated a healthy recognition of the new purposes of the School, and the number rapidly increased to 50 in 1894. At this point another, and still more serious, check to growth was created by the requirement — then unprecedented and still unparalleled in the Theological Schools of this country — of a tuition-fee of $150, as in other departments of the University. The gravity of this step was at once shown by the drop in attendance from 50 in 1894 to 26 in 1898. Once more, however, the reaction has exceeded the loss, and the registration, though still small, has steadily climbed to 52. The whole story encourages the belief that students, such as are here desired, will not be long persuaded to attend a Divinity School by its cheapness, or, on the other hand, long deterred from attendance either by high academic standards or by a fee like that which other professional students pay.



The denominations represented, and the progress of this representation since 1893 are in some degree illustrated by the following le, which takes account of those students only who have become ained ministers or were already ordained.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
tarian Congregational . . .	6	6	11	7	6	11	7	8	4	9	6	6
nitarian Congregational . . .	3	6	7	8	4	4	1	2	3	2	1	4
hodist Episcopal	2	3	1	3	..	3	..	2	..	2	2	2
sbyterian	1	1	..	2	2	1	..	2	1	..	..	..
testant Episcopal	2	..	..	3	4	..	3	1	..	1	2	1
tist	..	..	2	1	1	..	2	1	2	2	1	3
istian Connection	1	..	1	..	..	..	..	..	..	..	1	..
heran	1	..	..	..	..	..	..	..	..	1	..	..
thodist Protestant	1	..	..	..	..	..	..	..	..	..	..	..
ciples	..	..	4	..	..	..	1	1	..	..	..	1
tch Reformed	..	..	..	..	1	..	..	..	..	..	..	..
Church	..	..	..	..	..	..	1	..	..	..	..	..
e Baptist	..	..	..	..	..	..	..	..	1	..	..	..
versalist	..	..	..	..	..	..	..	..	..	1	1	..
ormed Presbyterian	..	..	..	..	..	..	..	..	..	..	1	..

From these facts it may be reasonably inferred that the pose of the School to offer an undenominational theological ining is receiving some degree of recognition and approval. e obstacles to its growth, in the competition of denominational ninaries, the low standard of admission often accepted, the indisminate aid offered in many Schools, and the resulting disinclination liberally educated men to enter the profession of the ministry, ke it improbable that this School will have a rapid growth; but conditions of a useful future are now provided in a body of truction which commands the respect of the University, and to ich many students not registered in the Divinity School resort. is interchange of instruction between the Faculty of Theology and other Faculties during the year 1903–04 was as follows.

Divinity students taking courses offered only by the Faculty of ts and Sciences, 1903–04: —

Semitic	5	elections.
Indic Philology	3	"
Greek	1	"
English	1	"
German	1	"
History	1	"
Economics	6	"
Philosophy	13	"
Education	2	"
	33	

Non-Divinity students electing courses offered by the Divinity School, 1903–04 : —

Old Testament	57	elections.
New Testament	13	"
Church History	59	"
History of Religions	108	"
Theology	6	"
Ethics	114	"
	357	"

Divinity Hall has been much improved during the year. The renovation of the Chapel has been completed, and it is now a dignified and beautiful place of worship. Tablets of marble or oak have been set in the walls in memory of Professor Hedge, Professor Thayer, and the Rev. Edmund H. Sears, and to recall the delivery in the Chapel of Ralph Waldo Emerson's Divinity School Address. To these are soon to be added memorials of Dean Everett and Professor Henry Ware, Jr. There has also been added to the equipment of Divinity Hall a modern bathroom with four slate-lined shower baths, and the hallway floors have been in part relaid. These changes, together with the provision of the Common Room for all occupants of the Hall, tennis courts at the rear, and the advantages of the Library and Reading Room, have made Divinity Hall one of the most attractive dormitories in the University. An instructive experiment has been undertaken in reserving the right of occupancy to students approved by the Dean, with a preference given to graduate students and professional students having some sympathy with the purpose of the School, and the result is the creation of a congenial group of mature men, who find in the building a pleasant centre of companionship. It seems not unreasonable that a similar plan, which may give to each dormitory or group of dormitories a certain stamp of interest or sympathy, might be applied to other Schools of the University with success.

An interesting incident of the year assures to the Divinity School the perpetuation of the happy memory and profound influence of Dean Everett. By the will of his daughter, Miss Mildred Everett, it is provided that, after certain life interests are discharged, the residue of her estate shall be held by trustees, who shall apply the income to " the establishment and maintenance of an undenominational Theological Review, to be edited under the direction of the Faculty of the Divinity School," in order to carry out a plan, as the will states, which was suggested by her father. The income at present available of this bequest is insufficient to justify the establishment of a Review, but it is the intention of the Faculty to begin in 1905 a more modest journal of theological inquiry, and the amount which will be finally received will permit the enlargement and perpetuity of a dignified journal. There has also been received from the Trustees of the estate of Mr. Robert C. Billings a gift of $2500, the income of which is to be applied to prizes or a prize to be known as the Billings Prizes for Improvement in Pulpit Delivery. Attention may be also called to the establishment by Harvard University and Simmons College of the School for Social Workers, and to the half-course in Principles of Relief offered by the Director of the School, Dr. Jeffrey R. Brackett. Students of theology interested in the study of philanthropy will appreciate these new resources of instruction.

The fifty-two students enrolled in the year 1903–04 were distributed as follows: —

Resident Graduates	14
Senior Class	8
Middle Class	4
Junior Class	10
Special Students	16
Total	52

Thirty-one colleges were represented as follows: —

Antioch College	1	Kentucky University	1
Boston University	3	University of Michigan	2
Bowdoin College	1	Mount Allison University	1
Brown University	5	Mount Union College	1
Chicago University	1	Ohio Wesleyan University	1
Colby College	1	Penn College	1
Dartmouth College	1	University of Pennsylvania	1
Earlham College	1	St. Stephen's College	1
Franklin and Marshall College	2	Taylor University	1
Harvard University	14	Trinity College	1
Highland University	1	Union College	1
Hiram College	1	Victoria University	1
Hobart College	3	Waynesburg College	1
Indiana University	1	University of Wisconsin	1
Iowa State Normal School	1		55
Iowa State University	2	Counted more than once	7
Kansas City University	1		48

Thirteen theological seminaries were represented as follows: —

College of the Bible, Ky.	2
Boston University	3
Concordia Theological Seminary	1
Crozer Theological Seminary	1
Episcopal Theological School, Cambridge	2
Harvard University	1
Kwansei-Gakuin	1
Newton Theological Institution	1
Nisky Moravian Theological Seminary	1
Oberlin College	1
Reformed Theological Seminary, Lancaster, Pa.	2
Union Theological Seminary	1
Yale University	1
	18
Counted more than once	2
	16

Seven members of the School were recommended for the degree of S. T. B., and ten received the degree of A. M.

The sixth session of the Summer School of Theology was held from July 5 to July 21. The School, unlike the programmes of earlier sessions, was directed wholly by our own Faculty, and was designed to present what may be called a cross-section through the body of theological instruction, each professor selecting some aspect of his special work which might seem of peculiar interest. Three courses of ten lectures each were given by Professors Toy, G. F. Moore, and Emerton; and the entire Faculty, with the exception of Professor Ropes who was absent in Europe, contributed to the series of forty-five lectures. Though the attendance was smaller than in preceding years, the general interest in the School was keen, and a committee was appointed by the members of the School to secure its continuance and promote its interests. The six sessions of the School have had the following record of attendance: —

	Men.	Women.	Total.
1899	96	9	105
1900	52	2	54
1901	84	5	89
1902	74	4	78
1903	54	4	58
1904	46	1	47

The distribution by denomination, in the case of ministers attending in the six years, was as follows: —

	Orthodox Congregational.	Unitarian Congregational.	Episcopalian.	Universalist.	Baptist.	Presbyterian.	Disciples.	Methodist.	Free Baptist.	Lutheran.	Christian Connection.	German Reformed.	Moravian.	Evangelical Association.
1899 . .	27	17	16	14	5	3	..	..	..	..	..	..	..	..
1900 . .	17	6	3	14	6	..	3	3	..	..	..	..	..	..
1901 . .	28	12	11	14	5	2	..	10	1	1	..	..	..	..
1902 . .	28	7	15	3	5	1	1	8	1	1	..	..	..	..
1903 . .	21	4	10	5	..	5	3	1	1	..	1	1	1	..
1904 . .	13	6	11	1	7	1	..	3	1	..	1	..	..	1

The following is a list of the Courses of Instruction offered in the School in the year 1903–04. With each course is a statement of the number of students electing it from the Divinity School, the Graduate School, and from the College. There is appended to the list of regular courses a list of the lectures of the Summer School. Almost all of the students enrolled in the Summer School attended all its courses.

COURSES OF INSTRUCTION.

INTRODUCTION TO THE STUDY OF THEOLOGY.

Professor G. F. Moore. — Eight lectures (*first half-year*). (Not counted for a degree.) 6 Div.

OLD TESTAMENT.

1. Professor Lyon. — Hebrew. Davidson's Introductory Hebrew Grammar. Explanation of parts of Genesis and of the Psalm-book. 4 Div., 4 Col.

2. Professor Toy. — Hebrew (second course). — Syntax. Interpretation of parts of the Prophets and the Poetical Books. Text-criticism. 2 Div., 1 Gr., 1 Col.

9. Dr. Haynes. — Classical Aramaic (second course). Rödiger's Chrestomathia Syriaca (ed. 3). The Peshitto. Nöldeke's Syrische Grammatik (ed. 2). 3 Div.

4. Professor Lyon. — History of Israel, political and social, till the capture of Jerusalem by the Romans. Text-books, lectures, and theses. 5 Div., 35 Col.

5. Professor G. F. Moore. — History of pre-Christian Hebrew Literature. 1 Div., 2 Gr., 6 Col.

6. Professor Toy. — History of the Hebrew Religion, with comparison of other Semitic religions. 3 Div., 2 Gr., 3 Col.

7. Dr. Haynes. — Assyrian. 1 Div., 1 Col.

8. Professor Lyon. — Assyrian (second course). 1 Div., 1 Gr., 1 Col.

20. Research courses. The instructors will arrange and supervise for any properly prepared student a line of special study on such topic as may be agreed on. 2 Div.

NEW TESTAMENT.

2. Professor Ropes. — Introduction to the Study of the New Testament. — *First half-year:* The origin and early history of the New Testament writings. *Second half-year:* The teaching of Jesus Christ, and the theological and ethical ideas of the New Testament Writers. 9 Div., 10 Col.

3. Professor Ropes. — The Gospels of Matthew, Mark, and Luke. 3 Div., 1 Gr.

13. Professor Ropes. — The Apocalyptic Literature, with special study of the Revelation of John. 2 Div., 2 Gr.

14 [1]*hf.* Professor E. C. Moore. — The Origin and Growth of the New Testament Canon in its relation to the rise of the Catholic Church and the beginnings of the history of the Dogma. *Half-course.* 3 Div.

15 [2]*hf.* Professor Fenn. — The Theological Method of Jesus and Paul. *Half-course.* 5 Div.

20. Professor Ropes. — Advanced study and research. The instructor will arrange and supervise special work of competent advanced students on such topics of New Testament study as they may desire to undertake. 1 Div.

CHURCH HISTORY.

1. Professor Emerton. — General Church History to the End of the Seventeenth Century. 6 Div., 3 Gr., 3 Col.

2*a* [1]*hf.* Professor Emerton. — The Formation of the Catholic Church. *Half-course.* 4 Div., 2 Gr., 11 Col.

2*b* [2]*hf.* Professor Emerton. — The Roman Papacy and the Holy Roman Empire in the Middle Ages. *Half-course.* 2 Div., 4 Gr., 33 Col.

4 [2]*hf.* Professor E. C. Moore. — The Church since the Reformation. *Half-course.* 5 Div., 3 Col.

6 *hf.* Professor Emerton. — Selected Topics from the Canon Law. *Half-course.*

20. Professor Emerton. — Advanced study and research.

HISTORY OF RELIGIONS.

1 [1]*hf.* Professor G. F. Moore. — Introduction to the Study of Religions. *Half-course.* 9 Div., 2 Gr., 12 Col.

2. Professor G. F. Moore. — History of Religions in Outline. 9 Div., 2 Gr., 92 Col.

THEOLOGY.

1. Professor Fenn. — Theism. 5 Div.

2. Professor Fenn. — Outlines of Systematic Theology. 3 Div.

3 ^{2}*hf.* Professor Fenn. — New England Theology. *Half-course.* 3 Div.

4 ^{1}*hf.* Professor Fenn. — Typical Systems of Christian Theology. *Half-course.* 1 Div.

6. Professor E. C. Moore. — The History of Christian Thought since Kant, including a discussion of the present state and tendencies of theological thought. 13 Div., 2 Gr., 4 Col.

ETHICS.

1. Professor Peabody. — Introductory Course. The Ethics of the Social Questions. — The modern social questions: Charity, the Family, Temperance, and various phases of the Labor Question, in the light of ethical theory. — Lectures, special researches, and required reading. 4 Div., 3 Gr., 107 Col.

20a. Professor Peabody. — Ethical Seminary. Subject for the year: The Ethics of the New Testament. 18 Div., 3 Gr., 1 Col.

20b. Professor Peabody. — Seminary in the Ethics of the Social Questions. The instructor will direct the special research of competent students in the ethics of the social questions. 3 Gr., 1 Rad.

HOMILETICS AND PASTORAL CARE.

1 *hf.* Asst. Professor Hale. — The Structure and Analysis of Sermons. *Half-course.* 8 Div.

2. Professors Peabody, E. C. Moore, and Fenn, and Asst. Professor Hale. — Each student prepares eight sermons during the year, of which some are preached before the class and criticized by students and instructor [in Appleton Chapel], and the rest are criticized by the instructor privately. Students in this course should already have taken Homiletics 1 or its equivalent. The course may be taken twice. 9 Div.

3 ^{2}*hf.* Asst. Professor Hale. — The Minister as Pastor, and the Direction of Church Activities. *Half-course.* 7 Div.

4 ^{1}*hf.* Professor Peabody. — The Minister as Preacher, and the History of Christian Preaching. *Half-course.* 4 Div.

5 ^{1}*hf.* Asst. Professor Hale. — The Homiletical Use of the Bible. *Half-course.* 1 Div.

ELOCUTION.

1. Mr. Willard. — Voice Training, and Practice in the Elements of Oral Expression. Preparatory to Course 2 or parallel with it. (Not counted for a degree.) 8 Div.

2 *hf.* Asst. Professor Winter. — Sermon Delivery, Scripture Reading, Oral Discussion. *Half-course.* 5 Div.

SUMMER SCHOOL OF THEOLOGY.

Professor C. H. Toy. — Ten lectures: The Development of Monotheism: — (1) Theory of a primitive revelation. Supposed traces of monotheistic belief among savages. (2) General lines of movement toward monotheism. (3) Egypt. China. Japan. (4) Brahmanism. Brahmo Somaj. Buddhism. Babism. (5) Greece. (6) Rome. (7) Persia. The Parsees. (8) Babylonia. Arabia. The Hebrews. (9) Christianity. Islam. (10) Religious value of the monotheistic idea. Modern doubts.

Professor D. G. Lyon. — Three lectures: Babylon and Israel.

Professor G. F. Moore. — Ten lectures: Judaism and the Beginning of Christianity.

Professor Ephraim Emerton. — Ten lectures: The Development of Reformation Thought: — (1) John Wiclif: The Theory of "*Dominium*." (2) John Hus: The Doctrine of the *Lex Christi* and of the True Church. (3) The Great Schism and the Councils — 1378–1448. The Principle of Executive Authority. (4) The Papacy — 1450–1517. Adjustment through Enlightenment and by Concordats. (5) The Mystical School — The Spiritual Interpretation of Tradition. (6) Erasmus: The Reformation by Learning. (7) Luther: The Doctrine of Personal Responsibility. (8) The Anabaptists: The Idea of a Continuing Revelation. (9) Zwingli: Anti-Sacramentarianism. (10) Calvin: The Christian State.

Professor W. W. Fenn. — Three lectures: The Development of Calvinism in New England.

Professor E. C. Moore. — Six lectures: Personal Influences on Theology in the Nineteenth Century: — (1) Schleiermacher and Ritschl: Constructive Theology. (2) Baur and Harnack: Historical Criticism. (3) Newman and Martineau: The Emphasis upon the Church and the Individual: Two Aspects of Authority. (4) Comte and Spencer: The Natural and Social Sciences. (5) Arnold and Browning: Literature, Critical and Creative. (6) Bushnell and Brooks: The Preacher's Contribution.

Professor F. G. Peabody. — Three lectures: The Ethical Teaching of Jesus Christ: — (1) The Growth of the Christian Character. (2) The Personal Consequences of the Christian Character. (3) The Social Consequences of the Christian Character.

Professors F. G. Peabody, E. C. Moore, E. Hale, and W. W. Fenn. — Instruction in Homiletics.

There were added to the Library 535 volumes and 17 pamphlets by purchase, 103 volumes and 112 pamphlets by gift. October 1, 1904, there were in the Library 33,867 volumes and 8,976 pamphlets. During the year 683 titles were catalogued in the author catalogue and 90 titles in the subject catalogue. There were borrowed from the stack for home use 1,104 volumes, from the stack for hall use 549 volumes, from the reserved books for over-night use 623 volumes.

FRANCIS G. PEABODY, *Dean*.

THE LAW SCHOOL.

To the President of the University: —

Sir, — I have the honor of presenting my report upon the Law School for the academic year 1903–04.

The table on pages 178, 179 gives the courses of study and instruction during the year, the text-books used, the number of

Year.	Whole No. of Students.	Total of College Graduates.	Harvard Graduates.	Graduates of other Colleges.	Non-Graduates.	Per cent. of College Graduates.	No. of Colleges represented.
1870–71	165	77	27	50	88	47	27
1871–72	138	70	34	36	68	51	25
1872–73	117	66	34	32	51	56	25
1873–74	141	86	49	37	55	61	25
1874–75	144	82	63	19	62	57	18
1875–76	173	93	60	33	80	54	25
1876–77	199	116	74	42	83	58	30
1877–78	196	121	80	41	75	62	30
1878–79	169	109	71	38	60	64	24
1879–80	177	118	90	28	59	66	20
1880–81	161	112	82	30	49	70	19
1881–82	161	99	66	33	62	61	22
1882–83	138	93	58	35	45	67	32
1883–84	150	105	75	30	45	70	25
1884–85	156	122	85	37	34	78	31
1885–86	158	122	83	39	36	77	29
1886–87	188	143	88	55	45	76	34
1887–88	225	158	102	56	67	70	32
1888–89	225	158	105	53	67	70	32
1889–90	262	189	122	67	73	72	41
1890–91	285	200	135	65	85	70	33
1891–92	370	257	140	117	113	69	48
1892–93	405	266	132	134	139	66	54
1893–94	367	279	129	150	88	76	56
1894–95	413	310	139	171	103	75	74
1895–96	475	380	171	209	95	80	82
1896–97	490	408	186	222	82	83	82
1897–98	551	490	229	261	61	89	77
1898–99	564	503	212	291	61	89	78
1899–00	613	557	236	321	56	91	67
1900–01	655	605	252	353	50	92	88
1901–02	633	584	247	337	49	92	92
1902–03	644	600	241	359	44	93	94
1903–04	743	694	272	423	48	94	111
1904–05	762	707	286	421	55	93	114

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
	First Year.		
Prof. Williston Asst. Prof. Wyman	Contracts. Williston's Cases on Contracts	3	301
Prof. Wambaugh	Property. Gray's Cases on Property, vols. 1, 2	2	314
Prof. Smith	Torts. Cases on Torts: Ames, vol. 1 (2d ed.), Smith, vol. 2	2	303
Prof. Beale. Mr. Peabody	Criminal Law and Procedure. Beale's Cases on Criminal Law	2	294
Prof. Ames	Civil Procedure at Common Law. Ames's Cases on Pleading	1	307
	Second Year.		
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency	2	35
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	36
Prof. Gray	Evidence. Thayer's Cases on Evidence (2d ed.)	2	206
Prof. Ames	Jurisdiction and Procedure in Equity. Ames's Cases in Equity Jurisdiction, vol. 1	2	210
Prof. Beale	Property. Gray's Cases on Property, vols. 3, 4	2	205
Prof. Williston	Sales of Personal Property. Williston's Cases on Sales	2	172
Prof. Ames	Trusts. Ames's Cases on Trusts (2d ed.)	2	207
Mr. Green	Admiralty. Ames's Cases on Admiralty	1	1
Prof. Williston	Bankruptcy. Williston's Cases on Bankruptcy	1	7
Asst. Prof. Wyman	Carriers. Beale and Wyman's Cases on Public Service Companies	1	12
Prof. Brannan	Damages. Beale's Cases on Damages	1	4
Prof. Smith	Persons. Smith's Cases on Persons	1	4

Third Year.

Prof. Beale	Conflict of Laws. Beale's Cases on the Conflict of Laws	2	146
Prof. Gray	Constitutional Law. Thayer's Cases on Constitutional Law	2	103
Prof. Smith	Corporations. Smith's Cases on Private Corporations (2d ed.). Smith's Cases on Municipal Corporations	2	194
Prof. Brannan	Partnership. Ames's Cases on Partnership	2	30
Prof. Gray	Property. Gray's Cases on Property, vols. 5, 6	2	58
Asst. Prof. Wyman	Suretyship and Mortgage. Ames's Cases on Suretyship. Wyman's Cases on Mortgage	2	157
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency	2	17
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	88
Prof. Gray	Evidence. Thayer's Cases on Evidence	2	17
Prof. Ames	Jurisdiction and Procedure in Equity. Ames's Cases in Equity Jurisdiction, vol. 1	2	10
Prof. Beale	Property II. Gray's Cases on Property, vols. 3, 4	2	2
Prof. Williston	Sales of Personal Property. Williston's Cases on Sales	2	14
Prof. Ames	Trusts. Ames's Cases on Trusts (2d ed.)	2	11
Mr. Green	Admiralty. Ames's Cases on Admiralty	1	18
Prof. Williston	Bankruptcy. Williston's Cases on Bankruptcy	1	73
Asst. Prof. Wyman.	Carriers. Beale and Wyman's Cases on Public Service Companies	1	81
Prof. Brannan	Damages. Beale's Cases on Damages	1	13
Mr. Donham	Equity III. Ames's Cases in Equity Jurisdiction, vol. 2	1	89
Prof. Wambaugh	Insurance. Wambaugh's Cases on Insurance	1	28
Prof. Smith	Persons. Smith's Cases on Persons	1	17

exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

During the twelve months from October 1, 1903, to October 1, 1904, 6,061 bound volumes and 1,853 pamphlets were added to the library. The library contained, October 1, 1904, about 81,800 volumes and 8,750 pamphlets.

The collection of portraits of judges and lawyers has been increased, during the past year, by 2 portraits in oils, 27 engravings, 4 etchings, 39 photographs, 1 water-color, 1 pencil sketch, and 17 lithographs. The two oil portraits, one of the late Professor Thayer, the other of Professor Ames, and both painted by Mr. Wilton Lockwood, were peculiarly acceptable as the gift in the one case of Professor Thayer's pupils, and in the other, of the students in the School during the year 1902–03. The portraits now hanging on the walls of Austin Hall number 388, namely, 23 oil paintings, 247 engravings, 21 etchings, 72 photographs, 1 water-color, 2 pencil sketches, 19 lithographs, and 3 bas-reliefs. There are also 34 trial scenes and views of law buildings.

The table on page 177 exhibits the growth of the School during the last thirty-five years, in the number of students, the number and percentage of college graduates, and in the number of colleges represented by their graduates. The figures for the current year will be slightly increased by later entries.

The number of non-graduates, 55, is somewhat misleading. Forty-five of these are Harvard College Seniors, on leave of absence and registered in the Law School, of whom 36 have completed the work for the degree of A.B., and 9 lack only one or one and one-half courses, or are deficient in college admission requirements. If these 45 seniors be transferred to the College Graduate column, we have 752 graduates, and the percentage of college graduates rises from 93 to 99.

The book-stack in Austin Hall has room for 60,000 volumes, or less than three-quarters of our 83,000 books. 23,000 volumes are shelved in the annex of Lawrence Hall, to the inconvenience of the reader and at the disquieting risk of the destruction of the books. Furthermore, the library is growing at the rate of more than 5,000 volumes a year. The lecture rooms are too few. The reading room, having only 240 seats, is suited to the needs of a school of not more than 400 students, or about three-fifths of those now in the School. There are only seven professors' rooms for eleven professors. The administration room is overcrowded, and there is no cataloguing room. In a word, the School has completely outgrown Austin Hall.

The inadequacy of the stack, the lecture rooms and professors' rooms, and of the administration and cataloguing accommodations, however inconvenient, may be endured for a time without serious detriment to the students. But the insufficient accommodations of the reading room are a serious menace to the effectiveness of the School.

When the students numbered 400 or less, a large majority of them did the greater part of their work in Austin Hall. They were always sure of finding a seat at a table, and in very many cases, by the operation of a sort of common law of their own, the same seat throughout the year. Being within easy reach of all the books they formed the habit of consulting freely the authorities, and gained a familiarity with the reports and treatises not to be obtained in any other way.

To-day the students, as a rule, do the greater part of their work in their own rooms. Many would prefer to work in Austin Hall, but the small seating accommodation makes it impossible to count upon obtaining a place at a table, and many students abandon the attempt to get one. In the opinion of all the members of the Law Faculty a return to the former practice of making the reading room the chief place of work of the students is imperatively demanded, if the School is to maintain its high standard of efficiency. Steps should be taken at once to enlarge Austin Hall, or, if that is impracticable, to build a new home for the School, and in the new building the reading room or rooms should have the capacity of seating at one time at least two-thirds of the students, and admit of expansion with the growth of the School.

JAMES BARR AMES, *Dean.*

THE FACULTY OF MEDICINE.

To the President of the University: —

Sir, — As Dean of the Faculty of Medicine I have the honor to submit the following report for the academic year 1903–04.

The standard of admission to the Dental School being different from that of the Medical School, the Faculty decided that hereafter special courses in first-year subjects and in second-year Bacteriology should be given to the dental students.

Heretofore students in the Medical School have been allowed one week in which to register and to make, in the fourth year, their choice of electives. In order that the systematized work of the School may begin more promptly, all students are now required to register on the first day of the term, and to make their choice of electives within the first three days.

By a vote of the Faculty, Legal Medicine will no longer remain as a separate required study, but the heads of departments will provide in the required courses of study instruction in the medico-legal aspects of their particular subjects, and a member of the legal profession will give a voluntary course of lectures to the fourth class on the relation of the medical profession to the law and the courts.

During the past year the Joseph Pearson Oliver Scholarship, with an income of three hundred and twenty-five dollars, was founded by the patients of the late Joseph Pearson Oliver, M.D. The four Faculty Scholarships, of two hundred dollars each, which were established in 1875, were withdrawn at the close of the year.

It was decided to open the graduate courses to such undergraduates as are competent in the opinion of the Dean to pursue them; and to put the graduate and summer courses in charge of one committee.

The Corporation having decided to confer degrees in the middle of the year, as well as at the regular Commencement, students who had been prevented from graduating in June by some failure in passing the required examinations, and who had in September made up such failures, were enabled to receive their degrees in February, instead of waiting, as heretofore, until June.

During the year 158 men were recommended to the Corporation for degrees as follows: —

Medical School	For the degree of M.D. (February)	11
	" " " (June)	95
	" " " *cum laude* (June)	27
Dental School	For the degree of D.M.D. (February)	1
	" " " (June)	19
	" " " *cum laude* (June)	5
	Total	158

The Committee on the Course of Study and the Committee on Medical Education, acting as a joint committee, have continued their meetings throughout the year for the purpose of perfecting the plans for the elective fourth year which goes into effect in the autumn of 1905.

WILLIAM L. RICHARDSON, *Dean.*

THE MEDICAL SCHOOL.

To the President of the University: —

Sir, — As Dean of the Medical School I have the honor to submit the following report for the academic year 1903–04.

The Administrative Board was constituted as follows: Drs. W. L. Richardson, J. C. Warren, E. S. Wood, F. C. Shattuck, W. F. Whitney, C. M. Green, C. Harrington, F. B. Mallory, and W. B. Cannon.

In March, Medical Director R. A. Marmion, U. S. N., President of the Faculty of the Naval Medical School and President of the Naval Medical Examining Board, gave an address to the students on "The Naval Medical Service as it now is, and the inducements which it holds out to young medical men."

In April, Geheimrath Professor Paul Ehrlich, of Frankfort, gave an address on "Pharmacology and Experimental Therapeutics."

Building. — No essential changes have been made in the building during the past year. Only absolutely necessary repairs were made during the summer, so that the expenditures in that line were much less than in former years.

Anatomy. — One of the most agreeable experiences of the staff has been the receipt of an unusually large number of applications for information, or for the opportunity to make observations on anatomical points, so that the department has been of service to many beside those connected with it.

The Anatomical Research Fund has been of great use. Not only has the expense of several papers been met in whole or in part, but a series of drawings of anomalies observed in the dissecting room have been begun. The Fund has also been used for the preparation of a card catalogue of anatomical literature, which has been made during the past summer under the constant supervision of the Professor. It includes some 3500 titles of anatomical papers, mostly in Journals.

The search for variations has been continued, and the collections in the Museum illustrating the range of variation have been extended. A considerable number of specimens were sent to the World's Fair at St. Louis, including the entire set exhibiting the range of variation of the human shoulder-blade, and several tablets bearing bones to illustrate the progress of ossification of bones at known ages.

The following papers were published from October 1, 1903, to September 30, 1904: —

An hour-glass stomach observed in situ. By Professor THOMAS DWIGHT. *American Journal of the Medical Sciences*, October, 1903.

A separate subcapitatum in both hands. By Professor THOMAS DWIGHT. *Anatomischer Anzeiger*, Bd. XXIV, 1903.

A bony supracondyloid foramen in man, with remarks about supracondyloid and other processes from the lower end of the humerus. By Professor THOMAS DWIGHT. *American Journal of Anatomy*, Vol. III, No. 3, July, 1904.

The diagnosis of anatomical anomalies causing malposition of the head and distortion of the face. By Professor THOMAS DWIGHT. *The Journal of Medical Research*, Vol. XII, No. 1, July, 1904.

The tonsil at birth. By Dr. H. P. MOSHER. *The Laryngoscope*, St. Louis, November, 1903.

A contribution to the mechanics of the spine. By Dr. R. W. LOVETT. *American Journal of Anatomy*, Vol. II, No. 4, 1903.

The anatomy and surgery of the internal derangements of the knee-joint. By Dr. BENJAMIN TENNEY. *Annals of Surgery*, July, 1904.

(It may be mentioned that the papers on a separate subcapitatum and a supracondyloid foramen in man treat of unique observations.)

Physiology. — There have been published the following papers containing investigations by the laboratory staff: —

The conditions of the vasoconstrictor neurons in "shock." By Associate Professor W. T. PORTER and Dr. W. C. QUINBY. *The American Journal of Physiology*, Vol. X, pp. 12–13.

On coördination of the ventricles of the heart. By Associate Professor W. T. PORTER, for Messrs. C. FROTHINGHAM, Jr., and W. E. LADD. *The American Journal of Physiology*, Vol. X, pp. 16–17.

The passage of different food-stuffs from the stomach. By Assistant Professor W. B. CANNON. *The American Journal of Physiology*, Vol. X, pp. 17–19.

The emptying of the human stomach. By Assistant Professor W. B. CANNON. *The American Journal of Physiology*, Vol. X, p. 19.

An improved kymograph; a respiration scheme; and a "muscle warmer." By Associate Professor W. T. PORTER. *The American Journal of Physiology*, Vol. X, pp. 39–43.

Further contributions to muscle tonus. By Dr. T. A. STOREY and Associate Professor W. T. PORTER. *The American Journal of Physiology*, Vol. X, p. 44.

Tonus rhythms in normal human muscle and in the gastrocnemius of the cat. By Dr. T. A. STOREY. *The American Journal of Physiology*, Vol. XII, pp. 75–84.

The following have also been published: —

Physiology at Harvard. By Associate Professor W. T. PORTER. Third edition. The University Press, Cambridge, Mass., 1904, pp. 117.

Additional experiments for students in the Harvard Medical School. By Associate Professor W. T. PORTER. The University Press, Cambridge, Mass., 1904, pp. 31.

Messrs. J. B. Ayer and D. Gregg have studied the effect of tonus changes on conduction. Assistant Professor Cannon and Drs. Blake and Scudder have continued their work on the surgical problems of the alimentary canal, and Assistant Professor Cannon has finished his investigations on the passage of food-stuffs from the stomach through the small intestine. Assistant Professor Cannon attended the meeting at Cambridge, England, of the British Association for the Advancement of Science, and delivered an address before the English Physiological Society on "The passage of different food-stuffs through the alimentary canal." At the International Congress of Physiologists, held in Brussels, Assistant Professor Cannon gave a demonstration of "The movements of the stomach and intestines," both by zoetrope and by X-rays.

Associate Professor Porter, together with Drs. T. A. Storey and F. H. Lamb, is continuing his studies in the physiology of muscle and the circulation. Assistant Professor Cannon is at present investigating the mechanism of the pylorus. Mr. C. R. Metcalf has been working on the effect of certain external physical changes on digestion. Dr. S. S. Maxwell is studying ciliary activity.

Histology and Embryology. — Many minor improvements were introduced into the course for the first-year students, and a trial was made of a system of coöperation between the anatomical and histological departments in class instruction. The success of this trial has induced the two departments to unite still more closely, so that the coming year the students will study in the histological laboratory the gross anatomy of each organ immediately before their study of its microscopic structure. The new plan is expected to prove of great benefit to the students.

The embryological collection has been increased by 124 new series of sections of embryos, which brings up the total number of series to 820. Especially noteworthy are the series of Torpedo ocellata, 68 in number, and the 19 series from human embryos, which are, for the most part, very good, while three are of exceptional value.

Professor Minot has begun the final manuscript of a work on "Growth, Age, and Death," for which materials have been gathered during twenty years. Professor G. C. Price, of the Leland Stanford Jr. University, completed in the laboratory a research on the excretory organs of myxine. Professor McClure, of Princeton, used the collection for part of his researches on veins. Dr. J. L. Bremer began an investigation of the anatomy of a human embryo of 4 millimeters. Dr. E. Taylor completed his work on the development of the rabbit, for Professor Keibel's Normentafeln, except the compilation of the bibliography, which has been begun. Dr. F. T. Lewis has published the following papers: —

The intra-embryonic blood vessels of rabbits from 8½ to 13 days. *Proceedings of the Association of American Anatomy*, pp. 12–13; in *American Journal of Anatomy*, Vol. 3, No. 1, 1904.

The shape of mammalian red blood corpuscles. *Journal of Medical Research*, pp. 513–517, Vol. 10, 1904.

The question of sinusoids. *Anatomischer Anzeiger*, pp. 261–279, Bd. XXV, 1904.

In order that the unique and valuable collection of embryos should be fairly utilized for original research, technical assistance is required for cataloguing, drawing, and especially making models by Born's method. Such an assistant would cost from twelve to fifteen hundred dollars a year. As the School is without funds available for such a purpose, a special gift seems the only hope. Such a gift would aid embryological research to an extent out of all proportion to its amount.

Bacteriology. — Very extensive additions have been made to a card catalogue of the literature of Bacteriology, which was begun in the fall of 1903. During the intervening time about six thousand cards have been written and cross-indexed, and at the same rate it is likely that in a short time there will be a fairly complete catalogue of the subject available for reference. It has already proved of much value to the workers in the department. Extensive additions have also been made to the collection of lantern slides, and progress has been made on a collection of large sized photographs of bacteriological subjects. The latter work has largely been carried on by Dr. S. B. Wolbach.

Professor H. C. Ernst gave a course of Lowell Institute Lectures, in January, 1904, on "Bacteriology in modern medicine." He delivered an address on "Animal Experimentation" before the medical section of The American Social Science Association in May: published in the Journal of that Association for September, 1904, and shortly to appear in *The Educational Review* (Columbia University).

He also delivered the annual address to the Massachusetts Medical Society, in June, on "Some recent fermentations in Medical Education": published in the Transactions of the Society for 1904, and in the *Boston Medical and Surgical Journal* for July, 1904. He prepared a communication on "Research Work in the Harvard Medical School," which was presented at the meeting of The American Medical Association in June: published in the Journal of that Association for July, 1904.

In connection with Professor Ernst, Dr. S. B. Wolbach carried on studies on the different races of the tubercle bacillus and the action of various tuberculins, published as follows: —

Observations on the morphology of bacillus tuberculosis from human and bovine sources, with ten plates. *The Journal of Medical Research*, Vol. X, No. 3, December, 1903.

Experiments with tuberculins made from human and bovine tubercle bacilli. *The Journal of Medical Research*, Vol. XII, No. 3, October, 1904.

Dr. N. L. Berry, Jr., made a study of bacterium pyogenes sanguinarium. *The Journal of Medical Research*, Vol. X, No. 3, December, 1903.

Mr. E. H. Burnett carried on studies on possible agglutinating properties of the tubercle bacillus. Results are not ready for publication.

Dr. L. Frothingham has carried on during the year a continuation of his studies on the etiology of epithelioma contagiosum of birds. The results of this work are slow in becoming conclusive. He has also carried on studies of a somewhat extensive nature on "Pseudoglanders bacilli."

Dr. C. G. Page made a large number of tests to determine the relative value of different methods of sterilizing catgut, and also studied in detail, in connection with Dr. Frothingham, a number of organisms that on potato culture resemble more or less closely the glanders bacilli.

Dr. J. H. Pratt, with a number of assistants, carried on an extensive series of experiments, with a view to determining the clinical value of blood-cultures in the diagnosis of typhoid fever.

Physiological and Pathological Chemistry. — The instruction to first-year students has remained the same as last year, the new arrangement adopted by the Faculty three years ago still being followed. It is impossible to judge of the success or non-success of the plan until the first class starting under the new system shall have reached its fourth, or elective year, and several other classes have followed. A thorough test of the work, both in the first year and the elective fourth year, will then have been made, and a proper estimate can be formed as to the success of the new arrangement, so far as the chemical teaching is concerned.

On account of the smaller classes the north portion of the laboratory has been found sufficient to accommodate the students of the first year. The south portion has, therefore, been changed somewhat, to adapt it for advanced and research work on Physiological and Pathological Chemistry.

Dr. R. L. Emerson, with Dr. R. Amory, has edited the second volume of the 5th edition of Wharton and Stille's *Medical Jurisprudence*, which is about to be published.

Dr. C. L. Alsberg has published in the *Archiv für experimentelle Pathologie und Pharmakologie*, May, 1904, an article entitled "Beiträge zur Kenntniss der Nukleinsäure."

Dr. Emerson is continuing his work on albumosuria, and is also investigating a more exact method for the determination of arsenic and lead in the urine.

Dr. Alsberg is conducting investigations upon sulphur metabolism and its relation to the bile acids.

Experimental Pharmacology and Therapeutics. — The instruction in this department has been changed as follows: Pharmacology and Materia Medica are now taught in the second half of the second year, while the instruction in Therapeutics has been transferred to the first half of the third year. This change is of advantage to the students, as the clinical instruction which they receive in the second year prepares them much better to take up the subject of Therapeutics in the third year.

The following publications have appeared: —

The composition of zygadenus venenosus and the pharmacological action of its active principle. By Dr. M. VEJUX-TYRODE. *The Journal of Medical Research*, May, 1904.

The influence of various fats on the formation and excretion of acetone. By Dr. ELLIOTT P. JOSLIN. *The Journal of Medical Research*, 1904.

Pathology. — Researches on scarlet fever have been carried on by Associate Professor F. B. Mallory and Dr. C. W. Duvall, which have given knowledge of importance relating to the cause of this obscure disease.

Dr. J. H. Wright described a peculiar protozoal organism in the tissues of tropical ulcer which has since been shown to be identical with an organism previously described in Dum Dum fever.

The full report on the small-pox investigation, on which several members of the department have been engaged, appeared in February last. It was felt that a continuation of the work, mainly in the line of experimental study, was necessary in order to establish more definitely the life history of the organism described as the cause, and to clear up some still obscure points in the pathology. For this purpose an expedition was sent to the Philippine Islands. The members of the expedition were Drs. W. R. Brinckerhoff and E. E. Tyzzer, both of whom had been engaged on the study of small-pox in this city. The expenses of the expedition were provided for by three citizens of Boston, who contributed $4,000, and by a contribution of $2,000 by the Rockefeller Institute. The United States Government provided free transportation for men and equipment. The expedition arrived in Manila in March. Excellent facilities for work were given in the United States Government laboratory in Manila, and there have been full opportunities for the study of the disease. The work so far accomplished consists of an extension of the work done here and the discovery of new facts of importance. While the investigation of small-pox was the main object of the expedition, it was resolved to take advantage of any opportunities for the study of other infectious diseases. An unusual opportunity was given in Manila for the study of chicken-pox, and new knowledge of the pathology of this disease has been obtained. It has also been discovered that an endemic dermatitis in the Islands is caused by a moth resembling the brown-tailed moth. Dr. Tyzzer will probably return home in December, and Dr. Brinckerhoff will continue the work alone.

The main work in Neuropathology has consisted in the study of the cerebral cortex in infections.

The following papers by the members of the department, and by the men working under them in the pathological laboratories of the School and the Hospitals, have been published during the past year: —

Einige Beobachtungen über naturliche und künstlich erzengte Leukotoxine. By Dr. HENRY A. CHRISTIAN. *Deutsches Archiv. f. klin. Medizin*, 1904, LXXX, p. 333.

A case of early acute pancreatitis without haemorrhage. By Drs. H. H. GERMAIN and H. A. CHRISTIAN. *Journal of American Medical Association*, 1904, XLIII, p. 888.

A case of double malignant tumor of the testicle. By Dr. R. E. LEE. *Medical and Surgical Reports of the Boston City Hospital*, 1903, 14th Series, p. 69.

Papillary adenocystoma of the thyroid and accessory thyroid glands. By Dr. HARRY C. LOW. *Medical and Surgical Reports of the Boston City Hospital*, 1903, 14th Series, p. 53.

Scarlet fever protozoon-like bodies found in four cases. By Associate Professor F. B. MALLORY. *Journal of Medical Research*, 1904, Vol. X, p. 483.

A hitherto undescribed fibrillar substance produced by connective-tissue cells. By Associate Professor F. B. MALLORY. *Journal of Medical Research*, 1903–04, Vol. X, p. 334.

Protozoa in a case of tropical ulcer ("Delhi Sore"). By Dr. J. H. WRIGHT. *Journal of Medical Research*, 1903–04, Vol. X, p. 472.

A case of glioma in the sella turcica. By Drs. F. H. HOWARD and E. E. SOUTHARD. *American Journal of Medical Sciences*, October, 1904.

A case of cortical hemorrhages following scarlet fever. By Drs. E. E. SOUTHARD and F. R. SIMS. *Journal of American Medical Association*, September, 1904.

The following articles are included in the monograph entitled Studies on the Pathology and on the Etiology of Variola and of Vaccinia: —

I. The pathological anatomy and histology of variola. By Professor W. T. COUNCILMAN, and Drs. G. B. MAGRATH and W. R. BRINCKERHOFF.

II. The life-history of cytoryctes variole, guarnieri. By Professor G. N. CALKINS.

III. On the occurrence of cytoryctes variolae, guarnieri, in the skin of the monkey inoculated with variola virus. By Drs. G. B. MAGRATH and W. R. BRINCKERHOFF.

IV. The etiology and pathology of vaccinia. By Dr. E. E. TYZZER.

V. On experimental variola in the monkey. By Drs. G. B. MAGRATH and W. R. BRINCKERHOFF.

VI. The leucocyte reaction in variola. By Drs. G. B. MAGRATH, W. R. BRINCKERHOFF, and I. R. BANCROFT.

VII. The infectiousness of the blood in variola. By Drs. G. B. MAGRATH and W. R. BRINCKERHOFF.

VIII. On the infectiousness of the late stage of the skin lesion in variola. By Dr. W. R. BRINCKERHOFF.

IX. The central nervous system in variola. By Dr. E. E. SOUTHARD.

X. A clinical and experimental study of the bacteriolytic complement of the blood serum in variola. By Dr. R. L. THOMPSON.

XI. Clinical observations on variola. By Dr. I. R. BANCROFT.

XII. Epicrisis. By Professor W. T. COUNCILMAN.

Comparative Pathology. — During the year work has been continued at the laboratory in the Bussey Institution, the available places being taken by men doing research work.

The following papers have been published: —

The pathological effects of periodic losses of blood. An experimental study. By Professor THEOBALD SMITH. *The Journal of Medical Research*, Vol. XII, pp. 385–406.

A study of the tubercle bacilli isolated from three cases of tuberculosis of the mesenteric lymph nodes. By Professor THEOBALD SMITH. *The American Journal of the Medical Sciences*, August, 1904.

The further differentiation of flagellar and somatic agglutinins. By Drs. HENRY G. BEYER and A. L. REAGH. *The Journal of Medical Research*, Vol. XII, pp. 313–328.

Problems in the life history of pathogenic bacteria. Address. International Congress, Arts and Sciences, St. Louis. By Professor THEOBALD SMITH. To be published in *American Medicine*.

A grant of $500 from the Rockefeller Institute for Medical Research was available for research during the year.

Much time was given to the planning and equipment of the new laboratory for the preparation of diphtheria antitoxin and vaccine under the direction of the State Board of Health. The building was erected in the winter and spring. In the summer it was furnished with the necessary apparatus, and the work begun at the end of July. The separation of the laboratory of the State from that of comparative pathology, both under one roof since 1896, necessitated the temporary equipment of the latter with much new apparatus in order that the work of the coming year might go on. The new laboratory will furnish facilities better than heretofore for the investigation of certain problems in the comparative pathology of the blood, in antitoxins and vaccine.

There is urgent need of a modern stable for housing the larger domestic animals under observation, for the study of infectious animal diseases, for autopsies, etc. The new Medical School buildings offer no facilities of this kind, yet there are no research laboratories built at present which do not provide for the maintenance of large animals. The grounds of the Bussey Institution are well adapted for animal quarters, together with such limited laboratory facilities as are needed for work which cannot be done away from the animals under observation.

Surgery. — The Division of Surgery is composed of the Departments of Surgery, Clinical Surgery, and Orthopedic Surgery.

During the year many changes have been made in the teaching of surgery, and plans have been formulated to further improve the instruction. The students now begin their required surgical instruction in the second year and it is continued throughout the third year. These changes made it necessary to teach in sections both the second and third-year students, and the instructors in many instances have done double the customary amount of their work.

The systematic lectures, recitations, and clinical exercises were coördinated so that now, during a given week, students receive lectures, attend and take part in clinics, and have recitations upon a specified subject.

The course in Surgical Technic has been amplified and now trains students for service in the wards and Out-Patient departments of hospitals.

The required sectional teaching in Minor Clinical Surgery was so modified that, by the courtesy of the administration of the two large hospitals, the student is now received as a surgical dresser in the Out-Patient departments.

The petty examinations at the end of minor and major sectional courses were abolished, and a practical examination in Surgery was substituted as a part of the requirement for the degree.

The position of Surgical Dresser at the Relief Station of the Boston City Hospital, by an agreement with the administration of the Hospital, was opened to graduates and to medical students of three years' standing. Many of the fourth-year students availed themselves of this opportunity to gain actual experience in surgical and medical work.

The following is a list of the publications of work done in connection with the Medical School by members of the Division of Surgery during the year: —

Clinical lecture on epithelioma. By Professor J. C. WARREN. *Boston Medical and Surgical Journal*, January 21, 1904.

Mechanical reduction of congenital dislocation of the hip. By Professor E. H. BRADFORD. *Journal of Medical Research*, November, 1903.

The resistance of tissues as a factor in the manual reduction of congenital hip dislocation. By Professor E. H. BRADFORD. *American Journal of Orthopedic Surgery*, February, 1904.

Case teaching in surgery. By Professor H. L. BURRELL and Dr. J. B. BLAKE. P. Blakiston's Son & Co., 1904.

A clinical lecture on "Stricture of the Urethra." By Dr. F. S. WATSON. *Boston Medical and Surgical Journal*, June, 1904.

Research work, under the auspices of the Committee on Surgical Research, has been carried on during the year. Bulletins No. II and No. III were published. The Secretary of the Committee on Surgical Research, Dr. R. B. Greenough, has edited these Bulletins.

Bulletin No. II contained a report of the Committee on Surgical Research upon the value of Blood Pressure Observations in Surgery, as determined by the Riva Rocci apparatus. This report was based upon clinical observations and experiments conducted at the Massachusetts General Hospital, the Boston City Hospital, and the Children's Hospital. The reports were made by Drs. F. T. Murphy, W. E. Faulkner, and J. S. Stone, and a brief summary of the results was contributed for the Committee on Research, by Dr. R. B. Greenough.

Bulletin No. II contained also a report upon the ultimate results of some gynaecological operations at the Massachusetts General Hospital, by Dr. R. G. Wadsworth.

Bulletin No. III contained four papers, as follows: —

The coagulation time of the blood: a comparison of the Wright and the Brodie-Russell instruments, based on 600 observations. By Drs. F. T. MURPHY and A. H. GOULD.

Experimental decapsulation of the kidneys. By Dr. N. H. GIFFORD.

A study of amputations of the lower extremity. By Dr. F. T. MURPHY.

Enterostomy in peritonitis. By Dr. R. B. GREENOUGH.

In addition to the papers already published, assistance was given by the Committee on Surgical Research toward the completion of a set of photographs and drawings of the lesions of chronic arthritis, for an investigation conducted by Drs. E. H. Nichols and F. L. Richardson.

Work was continued by the Cancer Committee of the Caroline Brewer Croft Fund during the year, and a third report will soon be published.

Hygiene. — Assistant Professor Harrington determined the comparative germicidal action of mercury compounds and of a number of the aromatic preparations (chiefly cresols) used largely in hospital work. He attempted the preparation of a combination that would destroy pyogenic organisms in less time than is required by any of the disinfectants in common use in surgical practice, and succeeded in finding one which was quickly effective and, at the same time, free from injurious effect on the skin. The cultures employed as test-objects withstood contact with the usual agents for periods varying from two minutes to three hours, but were destroyed by the new preparation within ten seconds. The combination has been adopted by many of the hospitals of the country.

He also completed an investigation of the effects of borax on the system, the substance being used very extensively as a food preservative. The results showed that, in cats at least, the daily ingestion of small amounts for some months causes extensive degenerative changes in the kidneys.

Dr. Walker investigated the bacteriolytic action of enzymes derived from the Bacillus pyocyaneus, and began a research on the bacteriolytic action, if any, of yeasts.

Dr. Harrington has published the following: —

Mercuric cyanide as a surgical disinfectant. *Boston Medical and Surgical Journal*, January 14, 1904.

Sources, effects, and prevention of dirty milk. *Journal of the Massachusetts Association of Boards of Health*, February, 1904.

Sodium sulphite: A dangerous food preservative. *Journal of Infectious Diseases*, March, 1904.

The practical side of the question of milk supply. *Albany Medical Annals*, March, 1904.

Sulphurous acid and its salts as food preservatives, as aids to fraud, and as possible causes of lesions of the kidneys. *Boston Medical and Surgical Journal*, May 26, 1904.

Borated food as a cause of lesions of the kidneys. *American Journal of the Medical Sciences*, September, 1904.

Some studies in asepsis. *Annals of Surgery*, October, 1904.

Milk. Health education series, No. 2. Boston: published by the Health Education League.

Museum. — The work in the Museum has been conducted upon the same general plan as during the previous years.

The chief additions to the collection have been made by Professor Dwight, who has added a series of Variations of Bone, which have been systematically arranged and labelled.

A series of models illustrating the variations in the normal breast were purchased by the Museum fund, also some casts selected from the collection of Dr. Goodwillie. The latter have been found useful in illustrating the surgical diseases of the mouth and face.

The Museum continues to be used frequently by advanced students and practitioners in a gratifying way.

The Scholarships and Fellowships were awarded as follows: —

Barringer Scholarship, No. 1,	G. S. Amsden, A.B.,	3d Class.
Isaac Sweetser Scholarship,	A. H. Crosbie, A.B.,	2d "
Claudius M. Jones "	S. J. Beach, A.B.,	3d "
Hilton "	C. R. Metcalf, A.B.,	2d "
" "	W. A. Sawyer, A.B.,	2d "
Barringer " No. 2,	H. W. Godfrey, A.B.,	2d "
Alfred Hosmer Linder Scholarship,	T. Ordway, A.M.,	3d "
Eveleth "	E. H. Place,	4th "
" "	L. S. Beals, A.B.,	4th "
" "	L. G. Beeley, A.B.,	4th "
Edward Wigglesworth "	C. L. Overlander, Ph.B.,	3d "
Charles B. Porter "	R. S. Stearns, S.B.,	3d "
Faculty "	L. Arkin, S.B.,	4th "
" "	N. H. Clark, S.B.,	4th "
" "	H. B. C. Riemer,	4th "
" "	W. C. Woodward, B.L.,	4th "
John Thomson Taylor "	B. E. Sibley, A.B.	3d "
Lucius F. Billings "	R. H. Goldthwaite, A.B.,	2d "
Orlando W. Doe "	W. L. Barnes, A.B.,	4th "
Charles Pratt Strong "	C. H. Staples, A.B.,	4th "
David Williams Cheever "	M. J. Shaughnessy, A.B.,	1st "
Lewis and Harriet Hayden " (½)	L. E. Welker, Ph.B.,	1st "
" " " " " (½)	J. G. Trimble, Jr., A.B.,	2d "
Cotting Gift,	W. Janowsky (Rochester Univ. Senior),	1st "

The George Cheyne Shattuck Fellowship was awarded Henry A. Christian, A.M., M.D., for work on leucocytotoxines and on histology of fat tissues.

The John Ware Fellowship and the Charles Eliot Ware Fellowship were awarded Ernest E. Tyzzer, B.P., A.M., M.D., for work on varicella and on a severe form of dermatitis which occurs in the Philippines and is due to a moth somewhat similar to the brown-tailed moth.

No essay was submitted for the William H. Thorndike prize, and the Boylston Medical prize was not awarded.

The statistics of the School will be found in the following tables: —

COURSES OF INSTRUCTION, 1903–04.

FIRST YEAR.

	Students examined.
Anatomy. — Professor T. Dwight, Demonstrator Warren, Assistant Whiteside, Assistant Mosher, Assistant Davis, Assistant Butler, Assistant Marcy, Assistant Wadsworth, Assistant Cheever, Assistant Murphy, Assistant Scannell, Assistant Robinson.	72
Physiology. — Professor H. P. Bowditch, Associate Professor W. T. Porter, Asst. Professor Cannon, Instructor Maxwell.	84
Histology and Embryology. — Professor Minot, Assistant Donoghue, Assistant Bailey, Assistant Emerson, Instructor Bremer, Instructor Lewis, Austin Teaching Fellow Taylor.	72
Physiological and Pathological Chemistry. — Professor Wood, Associate Professor Hills, Instructor Hewes, Instructor Emerson, Assistant Alsberg, Assistant Connolly.	70

SECOND YEAR.

Bacteriology. — Professor Ernst, Assistant Denny, Assistant Page, Assistant Perry, Assistant Robey, Assistant Everett, Assistant Berry, Instructor Hill, Austin Teaching Fellow Frothingham.	72
Pathology and Pathological Anatomy. — Professor Councilman, Associate Professor Mallory, Instructor Taylor, Instructor Wright, Instructor Christian, Instructor Nichols, Assistant Magrath, Assistant Tyzzer, Assistant Brinckerhoff, Assistant Sims, Assistant Southard.	74
Comparative Pathology. — Professor T. Smith, Instructor Christian, Assistant Magrath, Assistant Tyzzer.	
Therapeutics. — Asst. Professor Pfaff, Assistant Jordan, Instructor Vejux-Tyrode.	20
Hygiene. — Asst. Professor Harrington, Assistant Walker.	67
Theory and Practice. — Instructor Cutler, Assistant Stone, Assistant Joslin, Assistant White, Assistant Badger, Assistant Pratt.	
Clinical Medicine. — Professor Shattuck, Asst. Professor Sears, Instructor Vickery, Assistant Prescott, Assistant J. M. Jackson, Assistant Ames, Instructor Cabot, Instructor H. Jackson, Assistant Coolidge.	
Surgery. — Professor Warren, Professor Burrell, Instructor C. A. Porter, Instructor Nichols, Assistant Lothrop, Instructor J. B. Blake, Assistant Faulkner, Assistant Balch, Assistant Lund, Assistant Brewster, Assistant Cobb, Assistant Cotton, Assistant Codman, Assistant Greenough, Assistant Hubbard, Assistant Jones, Assistant Crandon.	

THIRD YEAR.

Theory and Practice of Medicine. — Professor Fitz, Instructor Cutler, Assistant Stone, Assistant Joslin, Assistant White, Assistant Badger, Assistant Pratt.	72
Obstetrics. — Professor W. L. Richardson, Asst. Professor C. M. Green, Instructor Higgins, Assistant Newell, Assistant Swain, Assistant Friedman.	78

Clinical Obstetrics. — Professor W. L. Richardson, Asst. Professor C. M. Green, Instructor Higgins, Assistant Newell, Assistant Swain, Assistant Friedman, Assistant Young.

Dermatology. — Asst. Professor Bowen. 76

Diseases of the Nervous System. — Professor Putnam, Assistant Waterman. 79

Pediatrics. — Professor Rotch, Asst. Professor McCollom, Assistant Craigin, Instructor Morse, Assistant Ladd, Assistant Dunn. 76

Psychiatry. — Instructor Cowles. 76

Gynaecology. — Asst. Professor Davenport, Assistant Storer, Assistant Newell, Assistant Young. 78

Surgery and Clinical Surgery. — Professor Warren, Professor M. H. Richardson, Professor Burrell, Instructor Thorndike, Instructor Nichols, Lecturer Beach, Lecturer Elliot, Assistant Lund, Assistant Lothrop, Assistant Faulkner, Assistant Brewster, Assistant Codman, Assistant Balch, Lecturer Harrington, Assistant Cobb, Assistant Cotton, Assistant Greenough, Assistant Hubbard, Assistant Jones. 67

Clinical Medicine. — Professor Shattuck, Asst. Professor Sears, Instructor Withington, Instructor Vickery, Instructor Jackson.

FOURTH YEAR.

Clinical Surgery. — Professor J. C. Warren, Professor M. H. Richardson, Professor Burrell, Instructor Monks, Assistant Lund, Assistant Mumford, Assistant Cobb, Assistant Lothrop, Instructor Thorndike, Instructor C. A. Porter, Assistant Greenough, Instructor Nichols, Assistant J. B. Blake, Assistant Brooks, Assistant Faulkner, Assistant Brewster, Assistant Cotton, Assistant Codman, Assistant Hubbard, Assistant Jones, Assistant Crandon. 158

Clinical Medicine. — Professor Shattuck, Asst. Professor Sears, Instructor R. C. Cabot, Instructor Withington, Instructor H. Jackson. 141

Ophthalmology. — Instructor Standish, Assistant Jack, Assistant Clap, Assistant Quackenboss, Assistant Spalding, Assistant Haskell. 140

Otology. — Professor Blake, Professor J. O. Green, Assistant Hammond. 139

Laryngology. — Instructor DeBlois, Instructor Farlow, Instructor Coolidge. 142

Legal Medicine. — Instructor E. W. Dwight. 141

Syphilis. — Instructor Post, Assistant C. M. Smith. 140

Orthopedics. — Associate Professor Bradford, Assistant Lovett, Assistant Goldthwait, Assistant Brackett, Assistant Dane. 120

Hygiene. — Asst. Professor Harrington, Assistant Walker. 145

Psychiatry. — Instructor Cowles, Instructor Lane.

Genito-Urinary Surgery. — Lecturer Watson, Instructor Thorndike.

Municipal Sanitation. — Lecturer Durgin.

Fourth Year Electives.

Ophthalmology. — Instructor Standish. 4

Otology. — Professor Blake, Professor J. O. Green, Assistant Hammond, Assistant Crockett. 3

Dermatology. — Instructor C. J. White. 60

Diseases of the Nervous System. — Professor PUTNAM, Instructor WALTON, Instructor KNAPP.	5
Gynaecology. — Asst. Professor C. M. GREEN.	16
Operative Obstetrics.—Asst. Professor C. M. GREEN, Instructor HIGGINS, Assistant NEWELL, Assistant SWAIN, Assistant FRIEDMAN.	96
Operative Surgery. — Professor M. H. RICHARDSON, Instructor MONKS.	77
Orthopedics. — Associate Professor BRADFORD.	22
Clinical Microscopy. — Curator WHITNEY.	15
Clinical Chemistry. — Professor WOOD, Instructor HEWES, Instructor EMERSON.	8
Anatomy. — Demontrator WARREN, Instructor DAVIS.	84
Embryology. — Professor MINOT, Instructor LEWIS.	2
Histology of the Nervous System. — Professor MINOT, Instructor BREMER, Instructor LEWIS.	1
Physiological Chemistry. — Asst. Professor PFAFF.	2

TABLE I. — GENERAL STATISTICS OF THE SCHOOL.

New matriculants	76

The whole number of students in attendance: —

In courses for graduates	49
Fourth Class	115
Third Class	81
Second Class	90
First Class	78
Total	413

Applicants for Degree (February)	11
Applicants for Degree (June)	138
Rejected	16
Graduated	133

Of the 133 students who received the degree of Doctor of Medicine, 27 received the degree *cum laude*.

	SUMMER COURSES.					GRADUATE COURSES.				
	1900.	1901.	1902.	1903.	1904.	1899–00.	1900–01.	1901–02.	1902–03.	1903–04.
Courses taken	167	151	145	188	177	63	40	30	57	59½
Students	149	126	130	148	135	46	29	25	41	49
Receipts	$4695	$4275	$4400	$5280	$4942	$1465	$1065	$700	$1400	$1446

TABLE II. — FINAL EXAMINATIONS.

		FIRST CLASS.								SECOND CLASS.									
		Histology.		Physiolog. and Path. Chemistry.		Anatomy.		Physiology.		Clinical Chemistry.		Path. Anatomy.		Therapeutics.		Bacteriology.		Hygiene.	
			%		%		%		%		%		%		%		%		%
1900	Passed	146		129		113		116		133		148		109					
	Rejected	14	9	18	12	12	9	35	23	15	10	5	3	62	36				
	Total	160		147		125		151		148		153		171					
1901	Passed	141		147		143		126		123		122		89		95			
	Rejected	24	13	31	17	26	15	52	30	12	9	7	5	60	40	21	18		
	Total	165		178		169		178		135		129		149		116			
1902	Passed	71		64		71		68		128		143		108		135			
	Rejected	7	9	12	16	18	20	13	16	23	15	17	11	68	38	19	12		
	Total	78		76		89		81		151		160		176		154			
1903	Passed	70		71		72		66		68		58		67		68			
	Rejected	5	7	2	3	10	12	33	33	9	12	15	20	39	37	9	12		
	Total	75		73		82		99		77		73		106		77			
1904	Passed	68		67		69		50				70				64		64	
	Rejected	4	5	3	4	3	4	34	40			4	5			8	11	3	4
	Total	72		70		72		84				74				72		67	

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

	THIRD CLASS.																FOURTH CLASS.																	
	Theory and Practice.		Surgery.		Obstetrics.		Pediatrics.		Dermatology.		Gynaecology.		Neurology.		Psychiatry.		Clinical Medicine.		Clinical Surgery.		Ophthalmology.		Otology.		Laryngology.		Legal Medicine.		Syphilis.		Orthopedics.		Hygiene.	
		%		%		%		%		%		%		%		%		%		%		%		%		%		%		%		%		%
1900																																		
Passed	118		116		116		129		114		120		119		115		115		117		110		115		114		119		121		83		113	
Rejected	7	6	5	4	12	9	10	7	13	10	0	0	7	5	8	6	9	7	2	1	16	12	1	1	5	4	0	0	1	1	0	0	18	13
Total	125		121		128		139		127		120		126		123		124		119		126		116		119		119		122		83		131	
1901																																		
Passed	132		126		129		136		109		128		125		129		111		120		108	8	114	0	117		121		120		71		116	
Rejected	8	6	5	4	9	6	2	1	30	22	7	5	12	9	9	6	10	8	2	2	10		0		0	0	0	0	0	0	0	0	12	9
Total	140		131		138		138		139		135		137		138		121		122		118		114		117		121		120		71		128	
1902																																		
Passed	111		110		111		120		113		117		116		116		131		129		121		131		137		132		135		98		124	
Rejected	10	8	5	4	11	9	3	2	19	14	6	5	7	5	11	8	6	4	0	0	18	13	3	2	0	0	2	1	1	1	1	1	17	12
Total	121		115		122		123		132		123		123		127		137		129		139		134		137		134		136		99		141	
1903																																		
Passed	137		132		121		128		131		130		139		136		109		114		112		113		115		116		118		92		111	
Rejected	6	4	8	6	22	15	12	9	16	11	16	11	8	6	6	4	8	7	0	0	6	5	2	2	3	3	3	3	0	0	0	0	12	10
Total	143		140		143		140		147		146		147		142		117		114		118		115		118		119		118		92		123	
1904																																		
Passed	71		65		68		70		66		71		73		71		128		158		140		134		139		135		139		120		138	
Rejected	1	1	2	3	10	13	6	8	10	13	7	9	6	7	5	6	13	9	0	0	0	0	5	3	3	2	6	4	1	1	0	0	7	5
Total	72		67		78		76		76		78		79		76		141		158		140		139		142		141		140		120		145	

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

FOURTH CLASS. — ELECTIVES.

	Ophthalmology.		Otology.		Gynaecology.		Dermatology.		Neurology.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Orthopedics.		Clinical Microscopy.	
		%		%		%		%		%		%		%		%		%		%
1900 Passed	3		4		11		54		5		59		81		6		40		5	
Rejected	0	0	0	0	0	0	3	5	1	17	0	0	7	8	0	0	3	7	0	0
Total	3		4		11		57		6		50		88		6		43		5	
1901 Passed	3		3		33		32		13		56		71		10		50		10	
Rejected	0	0	0	0	0	0	4	11	2	13	1	2	3	4	2	17	0	0	0	0
Total	3		3		33		36		15		57		74		12		50		10	
1902 Passed	6		1		14		64		7		87		79		5		37		7	
Rejected	0	0	0	0	1	7	4	6	2	22	11	11	2	2	0	0	1	2	1	12
Total	6		1		15		68		9		98		81		5		38		8	
1903 Passed	7		4		25		47		7		64		78		1		25		12	
Rejected	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0
Total	7		4		25		49		7		64		78		1		25		12	
1904 Passed	4		3		16		57		5		94		77				22		15	
Rejected	0	0	0	0	0	0	3	5	0	0	2	2	0	0			0	0	0	0
Total	4		3		16		60		5		96		77				22		15	

	Clinical Chemistry.		Anatomy.		Physiology.		Embryology.		Hygiene.		Physiolog. Chemistry.		Comparative Etiology of Infectious Diseases.		Histology of the Nervous System.		Pharmacology.	
		%		%		%		%		%		%		%		%		%
1900 Passed	4		12		1		1				2		4		2			
Rejected	0	0	2	14	0	0	0	0			0	0	0	0	0	0		
Total	4		14		1		1				2		4		2			
1901 Passed	3		20		2		2		1		1		2		2			
Rejected	0	0	0	0	0	0	1	33	0	0	0	0	0	0	0	0		
Total	3		20		2		3		1		1		2		2			
1902 Passed	3		14				1		5		3		2		1			
Rejected	0	0	0	0			1	50	0	0	0	0	0	0	0	0		
Total	3		14				2		5		3		2		1			
1903 Passed	2		19				2				2		4					
Rejected	0	0	0	0			0	0			0	0	0	0				
Total	2		19				2				2		4					
1904 Passed	3		33				2				1				1		1	
Rejected	0	0	1	1			0	0			0	0			0	0	0	0
Total	3		34				2				1				1		1	

At the close of the year the last class was graduated to which candidates not holding a degree in Arts, Literature, Philosophy or Science could be admitted. This requirement for admission has, as was to be expected, greatly reduced the total number of students in the School, but the number of students holding such degrees October 1, 1904, was forty-nine more than were in the School when the new requirement went into effect.

WILLIAM L. RICHARDSON, *Dean.*

THE DENTAL SCHOOL.

To the President of the University: —

Sir, — As Dean of the Dental School I herewith submit the following report for the academic year 1903–04.

The number of students enrolled was 115, divided as follows: —

Third-year students	35
Second-year students	29
First-year students	50
Post-graduate	1
	115

There were thirty-four candidates for the degree, five of whom failed in final examinations, leaving a graduating class of twenty-nine, five of whom received the degree *cum laude*.

The courses of instruction were as follows: —

Anatomy. — Professor T. Dwight, Demonstrator Warren, Assistants Flagg, Allen, Mosher, Butler, Marcy, Whiteside, Davis, Wadsworth, Cheever, Murphy, and Scannell. 424 hours.

Physiology. — Professor H. P. Bowditch, Associate Professor W. T. Porter, Assistant Professor Cannon, Instructor Maxwell. 348 hours.

Histology and Embryology. — Professor Minot, Assistants Emerson, Donoghue, Instructors Bremer, Lewis, Austin Teaching Fellow Taylor. 252 hours.

Physiological, Pathological and Dental Chemistry. — Professor E. S. Wood, Associate Professor Hills, Assistants Connolly, Alsberg, Instructors Hewes, Emerson, Smith. 308 hours.

Bacteriology. — Professor H. C. Ernst, Instructor Hill, Assistants Page, Denny, Robey, Perry, Everett, Berry, Austin Teaching Fellow Frothingham. 160 hours.

Materia Medica and Therapeutics. — Professor E. C. Briggs, 32 lectures; Assistant Rodgers, 32 recitations.

Dental Pathology. — Professor C. A. Brackett. 32 lectures.

Neurology. — Instructor E. W. Taylor. 4 lectures.

Crown and Bridge Work and Metallurgy. — Assistant Professor Cooke. 32 lectures.

Surgical Pathology and Surgery. — Professor Warren, Assistant Professor Burrell, Instructor Monks. 18 lectures.

Mechanical Dentistry and Orthodontia. — Professor E. H. Smith. 32 lectures.

Orthodontia. — Professor E. H. Smith, 32 clinics; Assistant Baker, 64 hours.

Mechanical Dentistry. — Clinical Instructor J. D. Dickinson. 8 clinical lectures.

Mechanical Dentistry. — Clinical Lecturer Stoddard. 16 lectures and demonstrations.

Mechanical Dentistry, laboratory, Juniors. — Demonstrator CROSS, Assistant Demonstrator CHASE. 544 hours.

Mechanical Dentistry, laboratory, Seniors. — Demonstrator CROSS, Instructors ELDRED, HADLEY, PARSONS, GRANT, HAYDEN, CHUTE, ESTABROOKS, SPINNEY, J. W. DICKINSON. 496 hours.

Operative Dentistry and Dental Jurisprudence. — Clinical Lecturer CLAPP, 12 lectures; Instructor STARRATT, clinical assistant.

Operative Dentistry and Oral Surgery. — Professor FILLEBROWN, 32 lectures.

Oral Surgery. — Professor FILLEBROWN, 32 clinics; Assistant SHUMAN.

Operative Dentistry. — Assistant Professor POTTER. 32 lectures.

Operative Dentistry. — Clinical Instructor WERNER. 13 lectures and demonstrations.

Operative Dentistry, infirmary, Juniors. — Assistant Demonstrator D. W. DICKINSON, Instructors FURFEY, LITTIG, MARSTON, KING, DAVIS, ESGATE, MCPHERSON, NAYLOR, ELLIOTT, WHITEHILL. 403 hours.

Operative Dentistry, infirmary, Seniors. — Demonstrator MCMEEKIN, Instructors TAFT, EDDY, BLAISDELL, BRADLEY, HOLMES, PERKINS, PAUL, FARRINGTON, HARDING, WENTWORTH. 624 hours.

Operative Dentistry, Samaritan Hospital. — Instructor ROGERS. 32 clinics.

Mechanical Treatment of Fractured Jaws, Cleft Palates, and other Deformities. — Demonstrator CROSS. 15 lectures.

Extracting and Anaesthesia (Demonstrations). — Instructors HART, SQUAREBRIGS.

The following tables show the work done in the infirmary and laboratory during the year: —

OPERATIVE DEPARTMENT.

Surgical clinics by Professor FILLEBROWN.

Necrosis	Number of cases	11
Abscess	" "	5
Antrum disease	" "	8
Epulis	" "	3
Hare lip	" "	1
Re-implantation	" "	1
Impacted Lower Third Molars removed	" "	5

INFIRMARY.

No. of patients treated	6,703
" " " for diseases of teeth and gums	2,707
" sets of teeth cleaned	1,099
" operations	17,079
" fillings — gold	2,236
" " amalgam	1,831
" " cement	1,471
" " gutta percha	2,399
" porcelain inlays	120

MECHANICAL DENTISTRY.

SERVICE TO PATIENTS.

No. of sets of artificial teeth	240
“ “ “ “ repaired	106
“ appliances for fractured jaws	42
“ obturators and appliances for cleft palates	10
“ plugs for antrum	6

PRACTICE WORK.

No. of sets of artificial teeth	77

Under the direction of Professor SMITH: —

No. of cases of irregularity treated and corrected	71
“ appliances	122
“ articulated models of regulating cases	125
“ regulating appliances	60

Under the direction of Asst. Professor COOKE and Instructor ELDRED: —

SERVICE TO PATIENTS.

No. of crowns and caps	120
“ “ “ repaired	14
“ pieces of bridge work	51
“ “ “ repaired	12

PRACTICE WORK.

No. of crowns and caps	247
“ bridges	145
“ porcelain inlays	26
“ carved teeth models	29

The course in metallurgy, heretofore given by Assistant Professor Cooke as a part of his course in crown and bridge work, was added to the course in dental chemistry given by Mr. H. Carleton Smith.

The courses in anatomy, physiology, histology, and bacteriology, as given in the Medical School to medical and dental students, were reorganized so that dental students may receive more special training along dental lines. The lack of this special training during the first year has been a serious drawback to the dental students in their work of the second and third years.

During the year, Dr. Thomas Fillebrown, Professor of Operative Dentistry and Oral Surgery, resigned. Professor Fillebrown has served the School as Professor of Operative Dentistry for fourteen years, and as Professor of Operative Dentistry and Oral Surgery for seven years, thus making a total service of twenty-one years. During this time Professor Fillebrown has been of great service to the School. He improved the technique of the surgery of cleft palates and added to it much that was new. He originated a distinctly new apparatus for maintaining continuous anaesthesia during surgical operations in the mouth. He contributed largely to dental literature and has freely given his inventions to the profession.

On April 11, 1904, Dr. William H. Potter, Assistant Professor of Operative Dentistry, was appointed to the Professorship of Operative Dentistry, the appointment to take effect September 1, 1904.

The summer work at the infirmary was well carried on through the gratuitous services of Drs. Squarebrigs, Cassidy, O'Brien, Hart, Sears, and Kent, assisted by a number of senior students who volunteered for the work. 498 patients were treated during the summer vacation.

The School has for several years maintained an Emergency Corps whose duty it has been to respond to calls for dental service in hospitals and in the homes of the sick poor, the object of this service being to relieve these people from pain arising from diseased teeth. The members of this corps have been selected from the senior class and have rendered efficient service. The Committee in charge of the work, however, thinking that it could be better done by graduates of the School, have secured for this service nine men, graduates of the School practising in Boston.

In 1902–03 the School closed with a deficit for the year of $2,124.80. This was due in part to the increased expense which attaches to improved laboratory and infirmary methods of teaching, and in part to the expense of materials, drugs, etc., used for patients, and for which an insufficient sum was charged, it being the purpose of the Administrative Board to run the infirmary on a charity basis so far as it is possible to do so. It did not seem desirable to increase the infirmary fees to prevent a repetition of last year's deficit, and so a petition was circulated among the teachers of the School asking for voluntary subscriptions. By this means $2,883.50 was raised which was applied to current expenses, thus saving another deficit for this year. A continuance of this generosity cannot be expected, and should not be allowed, as the teachers are giving to the School each year all that they can afford to give in the way of productive time taken from their hours of practice. There are a few patients who come to the infirmary who can afford to pay something for the treatment they receive. There are many others, however, who cannot afford to pay the cost of the materials used, and for such cases a suitable endowment is an absolute necessity.

EUGENE H. SMITH, *Dean.*

BUSSEY INSTITUTION.

To the President of the University: —

Sir, — I respectfully submit the following report on the Bussey Institution for the year 1903–04.

Thirty-three students were in attendance, of whom twenty, devoted to Agriculture and Horticulture, were registered at the Bussey Institution, while thirteen, members either of the Graduate School or of the Lawrence Scientific School, came from Cambridge to the Bussey Institution on certain days to attend the lectures on horticulture and to study the characteristics of trees and shrubs as seen growing in the Arnold Arboretum.

The degree of Bachelor of Agricultural Science was conferred upon three candidates at Commencement.

The usual courses of instruction were given in Agriculture (including Cattle Breeding, Cattle Feeding, and Dairying), Horticulture, Agricultural Natural History, Agricultural Chemistry, Chemical Analysis, and Mathematics and Surveying, by Messrs. Hersey, Watson, Morse, Dillingham, Robinette, Gilman, and Storer.

F. H. STORER, *Dean.*

THE LIBRARY.

To the President of the University: —

Sir, — I beg to submit this my seventh annual report on the Library, covering the year 1903–04.

In my previous reports, I have tried year by year to make plain, without exaggeration and without concealment, the precise nature of the Library's needs, the dangers which attend a postponement of their relief, and the ends to which a wise policy would direct the Library's growth. Every month's added experience confirms the justness and the urgency of what I have tried to set forth, but the strong hand or the united effort to provide what is needed still delays.

Our shelves are literally overflowing with books, gathered with the best expert advice and the most generous coöperation, and every year some group of them has to be removed from the building to make room for growth. Yet, urgent as is the need for additional shelf-room, even this is not our most pressing want; for books can be temporarily stored in other buildings or even boxed up as a last resort, and can wait until the larger quarters are at length provided, when they will resume their places in the Library; the loss, that is to say, is only temporary and partial, — it is as though, for the time being, certain books, and those for the most part the least useful in the Library, had never been acquired. There are other needs which occasion a more serious loss than this. Whatever prevents efficiency either in the administration of the Library or in the use made of the books by scholars is a permanent loss, one that cannot be made up in the future. These are the difficulties and shortcomings which are the most discouraging to grapple with, and give deepest concern to those who are the most interested in the College Library.

It is useless in this report to tell the story for the seventh time, but it must at least be said that last year was especially trying, because retrenchment in College expenditure was necessary in all directions, and the Library had to suffer in common with other departments. Administrative expenses in the Library as planned at the opening of the College year were reduced about $1,700, and this in the face of an expected large increase in the work to be done. In earlier reports, I have spoken of the many directions in which our work ought to expand or to improve; the same straitness in building and in money still affects every department of the Library's activity. No change of policy can be discussed, no new work planned for, no improvement in method can be adopted, no new gift accepted, without our coming up against the same two obstacles — "lack of room" or "lack of means." Every library doubtless has its own difficulties and feels the pinch of inadequate resources, but Harvard alone among the larger universities of the country has made no radical improvement in its library building in more than twenty-five years, for the changes made ten years ago in the old part of Gore Hall were of a temporary nature and designed solely to provide more shelf-room and more seats in the general reading-room. I visit other college libraries and I find well planned rooms for the suitable preservation of their books and ample opportunities for their convenient use by scholars, and I have to confess that the Harvard library is without such advantages. In 1877 Harvard set an example to others in building the first iron book-stack, then an untried method of construction, but since that time adopted for almost every library that has been built. More recently, other libraries have introduced other improvements, and we ought long ago to have followed their lead and benefited by the result of their experience.

The remarkable series of gifts for the purchase of books received this past year, the full list of which is given farther on, shows that the Library need never lack for generous support in this direction. These gifts, devoted as they were to special subjects, also show that our graduates, realizing what the Library stands for and has stood for, are interested in the growth here of strong special collections valuable to scholars and investigators, and quite outside the needs of undergraduate instruction. From the time of its foundation, for more than two centuries, this Library was the chief support of learning in America and the chief depository of the tools of scholarship. It has occupied a unique position among American libraries. It is still looked to by college teachers and by students all over the land, who expect to find here resources which they have failed to discover elsewhere. It should never cease to hold this honorable position and it never need do so. It may confidently expect always to be supplied generously with means for the current purchase of necessary books, and in addition it may always command the means to gather special collections of exceptional richness which shall make this Library the natural centre for research in many fields of learning, for it can depend upon the loyalty and interest of an ever increasing and generous body of graduates. In this respect it has a source of strength and a security which no public library supported by public funds can approach, and it should be able to assure its graduates and the public in general that a college library, above all others, can be depended upon to guard the interests of scholarship in the broadest sense.

Its only danger is that, having inadequate funds for administration, and so depending in part upon the free income of the College, on which other departments have an equal or even a more insistent claim, it may be forced by considerations of economy to restrict its activities, to abdicate the position it has so long held, to give up far-reaching plans, generous policies, and thorough-going methods, and to confine itself to supplying only the immediate necessities of college instruction and satisfying the wants of the present day alone. Already, under existing conditions of building and of income, the Library does not meet these demands as it should. It buys books on a generous scale, it receives gifts on a magnificent scale, but in recent years it has been each year less able to spend what is necessary to make these accessions available, and it has not provided, as other colleges have provided, convenient facilities for using them. This autumn the Corporation diminished by a little over one thousand dollars the income for the purchase of books. This is a wise and perfectly logical act so long as the expenditure for administration is held down to a fixed sum and the opportunities for using the books to advantage do not increase. It would be logical to cut down the purchase of books even by one half, to decline two-thirds of the gifts offered to us, and to dispose of many of our great special collections, which are generally considered to give the Library an honorable distinction, if provision cannot be made both in respect of building and expense of administration for the support of a normal, well regulated, and reasonable growth, a growth directed by the ablest body of expert advisers that can be imagined, the members of the College Faculty. Though the College, unaided, might be compelled by lack of means thus to restrict the growth and usefulness of the Library, I cannot believe that the alumni and the friends of learning throughout the country will permit such a condition to obtain.

It is a pleasure to record that in the peculiar difficulties of the past year, three friends have come to our assistance and have provided for special undertakings which would otherwise have had to be postponed, or carried on to the injury of other work. Mr. James H. Hyde assumed the expense of cataloguing Professor Bôcher's Molière collection, Mr. Hiram Bingham, Jr., employed an assistant to reclassify the books on South American History which are under his care, and gave personal supervision to the work in all its details, and Assistant Professor A. C. Coolidge took upon himself a large part of the expense connected with ordering books for the Hohenzollern collection and selecting from the Von Maurer library what we desired to retain. Of these kindnesses further mention will be made beyond.

No new numbers of the Bibliographical Contributions have been issued, but several are in progress. A catalogue of our extensive collection of Chapbooks and Broadsides (of a popular character) is now in press; the catalogue of the Molière collection is ready for the printer; an annotated list of editions of Tasso needs only a little revision; and the material is at hand for a "List of the more important recent accessions to the Library" which will contain the titles of all rare, expensive, and specially valuable books lately acquired, omitting such works, particularly recent publications, as any well equipped library might be expected to own. I hope that this last list will be of value to other libraries and to scattered students, as well as to our own professors, informing them what can be found in the Harvard Library.

In the autumn of 1903, the Corporation appointed three new officers in the Library, Curators of special departments, serving without stipend, unburdened by any regular administrative duties, but giving, so far as they have time and inclination to do so, advice and direction in the purchase and classification of books, and exercising a general supervision over the collections committed to their care. These three officers are Harry Nelson Gay, A.M., of Rome, Curator of Italian History of the Nineteenth Century, Edgar Huidekoper Wells, A.B., Curator of Modern English Literature, and Hiram Bingham, Jr., A.M., Curator of South American History and Literature. To Dr. Malcolm Storer, of Boston, we have already for many years been indebted for unpaid services as Curator of Coins. By the appointment of these gentlemen to honorary positions on the Library staff, the Corporation acknowledges the value of services already freely given by all of them, and hopes to retain their interest and counsel in the growth of their several departments. Of help received from them during the past year I speak later.

The library world has been deeply moved by the destruction by fire of the National Library in Turin, and in response to appeals for aid, the Corporation authorized me to send to that Library one hundred volumes from our duplicates. I selected these from books formerly belonging to Professor Ephraim W. Gurney, which came to the Library through the family of Professor Gurney's brother-in-law, Edward W. Hooper. The volumes sent were all works of value on Roman law and mediaeval history, and remembering the similar disaster to our own library in 1764, and the quick response from this country and from abroad which helped repair the loss, it was a pleasure to send this contribution toward the upbuilding again of a great European collection which had suffered in the same way.

From the chief librarian of the library I have received the warmest expressions of gratitude.

During the spring I asked the Catalogue Department and a few other members of the staff to meet weekly for an hour in the afternoon to make some study of the reference books most useful to cataloguers. We took as the basis of our study a classified list of such books lately compiled by the New York State Library. At each meeting one or more members were charged with reporting upon the books relating to a special subject or country, and the others were called upon to add what they could from their own experience. All took down from these reports in their note-books or their copies of the list, the shelf-marks of the volumes in our library, remarks on the scope or reliability of the several books, and the titles of other useful works not mentioned in the Albany list. I hope the meetings have had a good effect in promoting an intelligent use of reference books, for nothing is more important for a cataloguer than to know where to look first for desired information, and nothing is more useless and time-consuming than to search fruitlessly through books that ought not to be expected to contain what one is seeking.

The accessions to the libraries of the University for the year, and the present extent of each are shown in the following table: —

ACCESSIONS.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library)	22,295	437,109	293,000
Law School	6,061	81,808	8,750
Divinity School	638	33,867	8,976
Medical School	39	2,427	. .
Dental School	157	858	5,253
Bussey Institution	68	4,448	12,586
Museum of Zoölogy	1,982	40,064	33,330
Peabody Museum	181	3,138	2,908
Astronomical Observatory	382	11,141	21,969
Gray Herbarium	527	8,969	7,120
Arnold Arboretum	909	10,511	. .
Twenty-eight Special Reference Libraries	1,811	39,054	. .
Total	35,050		
Deduct, transfers between Gore Hall and Department Libraries	137		
Totals	34,913	673,394	393,892

Of the 22,295 volumes added to the Gore Hall collection, 7,870 came by purchase or exchange, 1,312 as the result of binding serial publications, and 1,104 by binding pamphlets separately, while the remainder, 12,009 volumes, were received by gift. 15,476 pamphlets have been received, 14,259 by gift, and 1,217 by purchase or exchange. 354 sheets of maps have been added to the map collection, which now numbers 21,610 sheets.

The number of volumes added is far greater than ever before. From 1895 to 1900 the average yearly increase was 12,800 volumes. In 1900–01 the additions numbered 13,800, in 1901–02, 14,000, in 1902–03, 17,000. Up to 1898 the accessions had only twice exceeded 12,000.

Dr. Malcolm Storer, the Curator of Coins, reports that he has received from Mr. Robert G. Fuller, of Brookline, a collection of 1,798 coins, among which were some 1,200 duplicates. These duplicates he is disposing of, and has already obtained in their place 40 medals. Other accessions of the year have been the medal of the New York Chamber of Commerce, a medallion of President Eliot by W. H. White, and an old silver Japanese coin from the Japan Club.

The total gifts to the College Library during the year 1903–04 and the previous five years have been as follows: —

Gifts to the College Library.	1898–99.	1899–00.	1900–01.	1901–02.	1902–03.	**1903–04.**
Volumes	7,096	11,360	4,749	4,648	7,358	**12,009**
Pamphlets	12,448	11,072	14,235	16,230	13,441	**14,259**
Totals	19,544	22,432	18,984	20,878	20,799	**26,268**

The greatest gift of the year, and one of the most valuable that the Library has ever received, is the library of the late Konrad von Maurer, Professor of German law in the University of Munich, given to us by Assistant Professor A. C. Coolidge.

In regard to the value and character of the library, I cannot do better than quote from Professor Witkowski, of the University of Leipzig, who, in a series of articles in the Allgemeine Zeitung, bewails the loss to German scholarship of the many private libraries which in recent years have found their way from Germany to America. The loss, he maintains, is irreparable, and cannot be counterbalanced by any corresponding advantage to American scholars. The transfer of the Von Maurer library to America he considers a particularly instructive case, impressing deeply the warning that Germans must not permit further inroads to be made on irreplaceable national possessions. Such expressions bring home to us very pointedly the duty which the ownership of such treasures implies — the duty of making them as widely useful as possible, and of maintaining the collection in serviceable condition.

Of the contents of the Von Maurer library, Professor Witkowski says: —

> "Two generations have labored, since the third decade of the nineteenth century, to gather and to build up, stone by stone, this proud structure. The foundation was laid by Georg Ludwig von Maurer (1790–1872). As a jurist, he devoted himself primarily to Germanic studies, but as statesman, as regent of the young Greek kingdom, and as Bavarian minister, he was led in his interests far beyond the special province of his literary activity, the history of German government and law. Bound by close friendship to Andreas Schmeller, of all German scholars the most profoundly versed in bibliographical matters, the elder Maurer knew how to track hidden treasures with that sportsmanship and passion which distinguish the true collector. Fortune favored him, for, in his youth, as a result of the secularization of the monasteries, the markets were flooded with rare books, and the most valuable editions could be procured for almost nothing. His only son inherited from him his character and scientific inclination, and choosing the northern Germanic countries as his field of study, he was in a position to gather about him the whole literature of his specialty, Old Norse law. An excursion to Iceland in the year 1858 brought him particularly rich booty in old manuscripts and printed books, and the Scandinavian countries placed at the disposal of the greatest historian of their law everything that could be of value in his work.
>
> "Thus was collected this library, which at the death of Konrad von Maurer (1823–1902) numbered 9,937 titles, among which 3,288 related to Scandinavian literature alone. Scandinavian jurisprudence and history of law are certainly nowhere in the world so richly represented as here, with 443 titles, and the same may be said of many other subjects and particularly of the legal monuments of all Germany. In turning over the 432 pages of the printed catalogue, one is struck equally by the collection's completeness and by the abundance of rarities.
>
> "Had one of the centres of German scientific research come into possession of this treasure, not only would a central point for the study of old Norse law have been again created, such as Munich was in Konrad von Maurer's day, but this study would itself doubtless have received a mighty impulse. Can it be supposed that a similar result will follow from the presence of the Von Maurer library in America?"

The Scandinavian section has been brought over from Germany as a whole, and, except for the group of books on Scandinavian law which has been taken by the Law School, will all be retained by the Library after the duplicates have been eliminated. This section alone brings us 2,660 volumes and 2,911 pamphlets. The duplicates in the other sections of the library, including many works of great value, were left in Germany to be sold, while the greater part of the treatises relating to German and especially Bavarian law have been sold to the Bar Association of New York. The remainder was received at the Library in July and numbered 4,794 volumes. The announcement of this gift was made at the opening of the Germanic Museum in November last, on which occasion Professor Coolidge stated that it was his intention to present to the University Library ten thousand volumes on German history in commemoration of the visit to the University of Prince Henry of Prussia in March, 1902. These books are to be known as the "Hohenzollern Collection." The Von Maurer Library will contribute about 2,875 volumes to the collection, and 1,050 additional volumes have already been received, making 3,925 out of the ten thousand. The books have been selected with great care and are for the most part collections of local sources, publications of historical societies, and historical monographs. Unfortunately our shelves are so crowded that it is impossible to give this generous gift a place in the Library building. The books have to be stored in a basement room of Robinson Hall, and there they will have to remain until we have a larger building, unless we clear out an equal number of other books now occupying shelf-room in Gore Hall. From the experience of the last year, it is obvious that a gift of this nature cannot be immediately completed. It is impossible to buy rapidly, and at the same time wisely, in a limited field, for suitable books do not offer themselves in sufficient numbers for purchase. It is therefore likely to be several years before Professor Coolidge's generous intention can be carried out to its fulfilment.

Several hundred volumes from the library of the late J. Elliot Cabot, of Brookline, were presented by his son and executor, Mr. Philip Cabot, who expressed a desire that such as would be of service in the Philosophical Reference Library in Emerson Hall should be given to that library. About a fourth part of the collection was put aside to be kept for the Emerson Hall library, 159 volumes were accepted for the College Library, a number of architectural works were appropriated to the Architectural Library in Robinson Hall, and the remainder had to be disposed of as duplicates. With Mr. Cabot's approval, I put many of these on sale at the Coöperative Society's store marked at almost nominal prices, so that they might fall into the hands of men to whom they would be of service without first appearing in public on the counters of second-hand dealers. I have done the same several times with other library duplicates and find a ready sale for books that it would be difficult to dispose of to advantage in any other way. Another group of Mr. Cabot's books has been set aside to send to the University of Ottawa, whose library was lately destroyed by fire.

Professor Norton has placed in the Library another instalment of the James Russell Lowell manuscripts, including the printer's copy of a number of contributions to the North American Review during Mr. Lowell's editorship. Mr. Lee Jenkins, of Salem, has sent us a package of manuscript lectures of Samuel Williams, Hollis Professor of Mathematics and Natural Philosophy from 1780 to 1788. Mr. F. B. Sanborn, of Concord, has given certain interesting manuscripts of Theodore Parker.

But the most remarkable feature of the year's history has been the number of gifts of moderate sums given by graduates of the College and a few other persons, for the purpose of strengthening the Library's collections in some special subject not sufficiently provided for by the ordinary appropriations. To mention them in alphabetical order, these gifts have been as follows: —

Francis R. Appleton, '75, of New York, $100 to be spent for books under the direction of Professor Kittredge (mainly English literature and folklore).

Lawrence S. Butler, '98, of New York, $50 for books on Paris.

Assistant Professor A. C. Coolidge, '87, and Hiram Bingham, Jr., A.M. 1901, Curator of South American History, $185 for books on South America.

Harold J. Coolidge, '92, of Boston, $100 for books on China (being two annual gifts of $50 each in continuation of previous gifts).

William Bayard Cutting, Jr., '00, of New York, $50 for books on the history of Florence.

Henry S. Hunnewell, '75, of Wellesley, $100 to be spent for books suggested by Professors Gardiner and Robinson.

Adrian Iselin, of New York, $50 for books on Swiss history.

James Loeb, '88, of New York, $100 for purchase and binding of labor periodicals (in continuation of previous gifts for the same purpose).

Mrs. Helen Bigelow Merriman, of Boston, and Dr. Roger B. Merriman, '96, $65 for a special collection of pamphlets on the Thirty Years' War.

Edwin Stanton Mullins, '93, $50 for books on folklore.

Mrs. George Augustus Nickerson, of Brookline, $200 in memory of her husband, of the Class of '76, for books on folklore, and an engraved bookplate for the same.

William Phillips, '00, of the American Embassy in London, $100 for books on London.

Edward M. Shepard, of New York, $50, used to buy an edition of Vitruvius.

John Harvey Treat, '62, of Lawrence, $300 for books on the catacombs and the Christian antiquities of Italy (in continuation of earlier gifts for the same purpose).

Beekman Winthrop, '97, of New York, $50 for books on the Philippines.

The gifts from Messrs. Butler, Cutting, Mullins, and Phillips, and from Mrs. Nickerson are to be continued from year to year for periods of from three to five years.

From the Dante Society we have received a further gift of $150 for the purchase of books on Dante.

Mr. Hiram Bingham, Jr., Curator of South American History, beside sharing with Professor Coolidge the expense of many purchases which he had authorized, entered into correspondence with the officials of many South American governments and with our legations in several South American capitals, and has thus secured for the collection under his charge many valuable publications.

Mr. Harry Nelson Gay, of Rome, Curator of Italian History of the Nineteenth Century, spent for us to excellent advantage, in Rome, the small appropriation placed in his hands, and sent in addition over a hundred volumes and pamphlets as a gift from himself.

Through Mr. Edgar H. Wells, Curator of English Literature, $350 have been received in addition to the $1,455 previously collected by him, for English literature of the eighteenth century.

The English Department appropriated to the use of the Library $400 from the proceeds of plays given under its auspices. This has been spent mainly for early editions of English plays.

Through Assistant Professor J. H. Gardiner we received further subscriptions amounting to $57 for the purchase of Bibles.

Mr. James H. Hyde, '98, of New York, generously supplemented his gift of Professor Bôcher's Molière collection by providing $900 toward the expense of preparing a catalogue of the books and binding such volumes as were still unbound.

I omit any mention of important single works acquired either by gift or purchase, for I hope early in the year to issue, as one of our Bibliographical Contributions, a list of the more valuable recent accessions.

SPECIAL REFERENCE LIBRARIES.

The present extent of these libraries is as follows: —

Special Reference Libraries.	Permanent.	On Deposit.	Totals.
1. Chemical Lab. *Boylston Hall*	792	983	1,775
2. Physical Lab. *Jefferson Phys. Lab.*	31	369	400
3. Botanical Lab. *University Museum*	586	124	710
4. Geological Lab. *Do.*	124	. .	124
5. Mineralogical Lab. *Do.*	510	230	740
6. Phys. Geography Lab. *Do.*	344	227	571
7. Zoölogical Lab. *Do.*	277	. .	277
8. Classics. *Harvard Hall 3*	3,760	148	3,908
9. History. *Harvard Hall R. R.*	2,582	17	2,599
10. United States History. *Harvard Hall R. R.* . .	881	8	889
11. Political Economy. *Do.* . .	1,273	1	1,274
12. Social Questions. *Do.* . .	927	6	933
13. Child Memorial (English). *Warren House* . . .	4,481	90	4,571
14. Lowell Memorial (Romance). *Do.* . . .	1,498	6	1,504
15. German. *Do.* . . .	1,275	. .	1,275
16. French. *Do.* . . .	2,533	. .	2,533
17. Sanskrit. *Do.* . . .	919	23	942
18. Semitic. *Semitic Museum*	1,301	. .	1,301
19. Mathematics. *Sever 22*	538	80	618
20. Mining and Metallurgy. *Rotch Laboratory* . . .	42	17	59
21. Engineering. *Pierce Hall*	6,255	521	6,776
22. Music. *Holden Chapel*	416	. .	416
23. Philosophy (Psychol. Lab.). *Dane Hall*	669	43	712
24. Education. *Lawrence Hall*	4,937	. .	4,937
25. Fine Arts (incl. Gray and Randall Coll.). *Fogg Museum*	900	. .	900
26. Architecture. *Robinson Hall*	972	13	985
27. Preachers' Library. *Wadsworth House*	95	. .	95
28. The Study. *Phillips Brooks House*	59	. .	59
29. Social Service Committee. *Phillips Brooks House*	77	. .	77
Totals	39,054	2,906	41,960

The largest additions were to the libraries of Chemistry, 171 volumes; History, 293 volumes; English (Child Memorial), 124 volumes; Engineering, 206 volumes; and Education, 361 volumes.

The reading-room in Harvard Hall is still overcrowded, and it is probably true that many men who would naturally use it are discouraged from doing so by the uncomfortable conditions that result from overcrowding. After another year, the library on Social Questions will be removed to Emerson Hall, and more room will be available for both books and readers in History and Economics. The collections in Harvard Hall, amounting to 5,700 volumes, are intended primarily for elementary students. The collections in Warren House (English, French, German, Early Romance, and Sanskrit literature), amounting to over 10,800 volumes, are for advanced students only. In both buildings, the rooms are under the constant charge of attendants, and it is gratifying to record that from Harvard Hall only three volumes have been lost during the year, and from Warren House only two.

Probably over 1,500 men used the Harvard Hall libraries, and 330 had access to those in Warren House.

In order to reduce expenses, it was decided to close Warren House in the evenings. The use of these rooms in the evening had always been slight, the number of readers varying from four or five to seventeen or eighteen, but to these few constant workers it was doubtless a highly prized privilege, and I was sorry to discontinue it.

In the spring, parts of the Classical library were reclassified under Dr. Rand's direction, and in the autumn the arrangement of the collection of meteorology and physical geography, in the Physical Geography Laboratory, was revised with Professor Ward's help.

Through the generosity of Mr. Mallinckrodt, of St. Louis, the Chemical Laboratory was able to increase its library facilities, by refitting its library room, and employing an attendant to take charge of its books. At the Director's urgent request, I have allowed some of the sets of purely chemical journals to be transferred to this library, and the current numbers to be kept on file there. Journals which were of interest to other departments, as well as to the Chemical Department, have been retained here. The question of transferring treatises and books of reference from the shelves of the College Library to the laboratory library was also considered, but it was decided that these should remain in Gore Hall, and that they should be duplicated in the laboratory. The laboratory copies will always be retained in the laboratory for reference; the Gore Hall copies can be borrowed for home use.

The long delayed enlargement of the College Library has had the effect of strengthening these special reference libraries and favoring their development, some on one principle and some on another. Some contain mainly duplicates of what is on the shelves of Gore Hall; others supplement the Gore Hall collection, containing many books that have not been added to the central library. This latter condition occurs when the means of adding to the special library, usually provided by private generosity, have exceeded what could be appropriated from the general income for Gore Hall purchases, or when the personal interest of the professor in charge has for some other reason inclined to his reference library rather than to the collection relating to his subject in the central library. This lack of coördination, involving a division of our resources on accidental lines, is unfortunate, but has been perhaps unavoidable under the circumstances. The normal and more favorable conditions, as seen in some other colleges, would have been for the special libraries to be formed in seminary rooms under the same roof with the central library. Each would then comprise first, as its own property, the essential works that it is convenient to have permanently at hand, these being duplicates of books in the general library, and, second, books transferred freely to the special library from the general collection for temporary use or even for long periods, but subject to the same demand by borrowers (if not duplicated) as when on their original shelves. In this way, advanced students and instructors are given convenient rooms in which to work, more convenient than any places that can be provided for them in a book-stack. In these rooms they have the essential books permanently at hand, while the whole resources of the general library are freely at their service when needed, yet are not thereby withdrawn from more general use, as is necessarily the case with books which belong to a separated special library. Moreover, the fuller collections of the central library are not so apt to suffer by the drawing off of interest and support to a smaller special library. It may be possible to straighten out such complications when the larger building becomes a reality, but each year's delay increases the difficulty of readjustment and saps the strength of the centre while enriching the branches independently. The more natural course is to build up the centre in such a way that its full strength may flow into the branches.

USE OF BOOKS IN THE COLLEGE LIBRARY.

The following table shows the use of books at Gore Hall in 1903–04 as compared with previous years: —

USE OF BOOKS.	1897–98.	1898–99.	1899–00.	1900–01.	1901–02.	1902–03.	1903–04.
1. Books lent	61,272	63,005	63,712	63,673	58,443	63,183	66,851
2. Used in the building . (Recorded use only.)	27,017	25,595	23,715	24,180	22,583	24,924	23,111
Totals	88,289	88,600	87,427	87,853	*81,026	88,107	89,962
3. Over-night use of Harvard Hall Reading-room	11,938	12,046	13,460	13,566	13,594	13,164	12,644

---

* The decline in the figures for this year is probably to be ascribed to errors in the statistics.

Of the constant use of the reserved books in the reading-room, and of the collections of reference books, periodicals, and United States documents, freely accessible to all, no record is possible. The use of the reading-room has, however, increased so much in the last few years that it has become necessary to add a second attendant at the desk. Mr. Briggs, who had been Superintendent of the reading-room since 1894, resigned in June to take the position of Reference Librarian in the Brooklyn Public Library. He had managed the room with admirable firmness and courtesy and in the most helpful spirit, and his acquaintance with the books most used by students was so thorough and so ready that his loss cannot easily be made good. He is succeeded by Mr. Charles A. Mahady, who has had useful preparatory experience in the delivery-room, and has had charge of the reading-room three evenings in the week for five years.

The extent of the open reading-room collections and their growth is shown in the following table: —

OPEN COLLECTIONS.	1899–00.	1900–01.	1901–02.	1902–03.	1903–04.
Bound Periodicals	3,275	3,140	3,210	3,266	3,341
Reference Books	4,224	4,235	4,393	4,471	4,645
Reserved Books	10,134	10,557	10,141	10,398	10,514
U. S. Documents	3,887	4,698	4,389	4,523	4,300
Totals	21,520	22,630	22,133	22,658	22,800

The number of bound periodicals keeps about the same because the shelf room for them is limited, and as the collection receives its necessary yearly increase, one set after another has to be removed to the stack. The number of the United States documents has diminished for the same reason.

The books shelved in the reading-room, together with those in the various special reference libraries in Harvard Hall, Warren House, and elsewhere, amount altogether to about 65,000 volumes to which direct access can be had by all students to whom they are of value. In addition the library of the Harvard Union now offers to its members over 7,000 books, mainly literature, biography, history, travel and sport.

Cards of admission to different sections of the book-stack continue to be given, on recommendation of an instructor, to all advanced students who need to go directly to the shelves for purposes of investigation in connection with their work. Such students have the same facilities for the examination and study of all the resources of the Library, in their chosen departments, that the officers of instruction enjoy. The use of these cards of admission to the book-stack is shown in the following table: —

ADMISSION TO THE BOOK-STACK.	1896–97.	1897–98.	1898–99.	1899–00.	1900–01.	1901–02.	1902–03.	1903–04.
History	54	51	78	112	81	90	118	92
Science	11	33	43	30	36	37	45	38
Art and Archaeology (including Music).	18	34	38	33	33	55	46	42
Literature	64	90	90	85	74	80	125	144
Classics	41	52	60	70	58	70	73	62
Philosophy	4	11	19	19	22	27	31	22
Theology	1	3	5	1	1	14	2	9
Economics and Sociology	4	9	12	13	13	16	33	26
Education	5	2	8	4	7	4	25	10
Geography	8	14	2	3	9	15	6	7
Publ. of Learned Societies . . .	. .	. .	. .	. .	16	8	7	6
Totals	210	299	355	370	350	416	511	458
Times of use	4,381	5,750	5,826	6,898	6,067	5,551	6,244	6,413

The number of individuals admitted was 315, not 458 (last year 366, not 511), because the same person often receives permission to use different parts of the book-stack. The number last year had increased so much that I was obliged to warn the professors who recommend students for admission that more were being received than could find room to work. The result is some falling off in the number, but even 300 persons, in addition to the officers of the University, are more than can be freely admitted without causing some inconvenience. The natural tendency, when a man has a long investigation in hand requiring access to many books, is to plant himself for hours, or even days, at one of the little tables nearest the row where most of his books are, yet this cannot be done without keeping out others who have an equal right to the same privilege. I have had to post notices reading: "Students who have access to the stack are reminded that the tables here, being few in number, must not be used for protracted study or writing. Such work should be done in the reading-room." Yet it is perfectly evident that such work often cannot be done in the reading-room, where no conveniences can be provided for continued work, for the keeping of private papers and writing materials, and for shelving books wanted by an individual for constant use during a few days or weeks. Such opportunities can only be enjoyed when each department has its own study rooms for advanced work under the same roof with the Library.

In the course of the year the temporary use of the Library has been granted to 134 persons not connected with the University, who have come to Cambridge for purposes of study. As in other years, frequent applications for the loan of books have been received from other libraries, especially college libraries, and from scholars in distant parts of the country, and the Library has sent away 742 volumes in response to these requests.

The Sunday use of the reading-room is shown in the following table. The room is open, to readers only, every Sunday in term-time from one to half-past five in the afternoon.

SUNDAY USE.	1896–97.	1897–98.	1898–99.	1899–00.	1900–01.	1901–02.	1902–03.	1903–04.
Sundays open	35	35	35	35	35	36	35	36
Users	5,010	4,635	5,093	4,846	5,471	4,909	5,073	4,678
Average	143	132	145	138	156	136	144	129
Highest number . . .	227	297	260	236	226	225	227	173

The decline in the average number of readers is doubtless due to two causes, the existence of other opportunities for quiet enjoyment on Sunday afternoon, such as the library of the Union and the gatherings in Phillips Brooks House, and the permission to borrow reserved books from the reading-room on Saturday afternoon or evening to be kept out over Sunday.

SHELF DEPARTMENT.

Mr. Frank Carney, who has charge of the current work of the shelf department, reports 15,213 volumes permanently located in the stack during the year, 11,089 added to classes previously arranged, and 4,124 in sections newly classified, making 326,122 volumes so placed of the entire Gore Hall collection. In addition the books on South American history (1500 volumes) have been reclassified.

The newly classified sections are the following: —

Education	3,890
Egypt (Modern)	234
	4,124
South America (reclassified)	1,500
	5,624

The classification of Education has been in progress for several years, but has been delayed partly by my own failure to take the time to revise the work as blocked out by Mr. Carney, and partly by the pressure of work in the department.

The books on South America have been reclassified and renumbered at the expense of Mr. Bingham, whose interest in the subject and whose purpose to obtain considerable additions to the collection induced him generously to take up a task that was at the time beyond the means of the Library. By the removal of these books from their place on the third floor of the East stack to the lower floor of the West stack, space has been gained for the expansion of North American history. The new numbering scheme that has been applied agrees in principle and general form with that used for all classes that have been classified here since 1883. Unfortunately the first sections of the Library which were reclassified (between 1877 and 1882), including American history, English history and literature, French history and literature, German history and literature, Philology and Folklore, were all numbered on the "fixed-location" plan, that is, the number indicated a particular shelf, not a special subject or subdivision. This has naturally broken down in many places, and is bound eventually to break down everywhere. Like all libraries that have tried to continue a system of this kind through many years, we have been forced to let it slip over into the other or "relative-location" system, making the number which originally indicated a particular shelf now indicate the particular subject which was originally on that shelf, and allowing the books under that number to stretch along over as many shelves as they will. This transformation is easily accomplished and proves fairly satisfactory when the numbers on the shelves follow in numerical sequence with the order of subjects. Unfortunately this is not the case with us. The books are naturally arranged in each row from left to right. The numbering of the shelves, however, was always from the north side of the building to the south side, so that in every alternate row the numbers run from right to left, or in the reverse direction from the natural succession of subjects. This was of no consequence so long as the books remained on the shelves originally intended for them, and the numbers still indicated particular shelves. Indeed, there was a certain convenience in always having the lower numbers on the north end of the row, and the higher on the south end, and one could almost go to the shelf indicated with one's eyes shut. But just as soon as this system broke down by the filling up and overflowing of the shelves, and the time came when the numbers were accepted as subject numbers and not shelf numbers, the books had to be arranged in the order of the numbers, and the unhappy result follows that blocks of fifty or sixty shelves, still standing in the order in which they were intended to stand, alternate with blocks of fifty or sixty shelves in which the books are in the reverse order, yet not completely in the reverse order, but reversed group by group according to the arrangement of the shelves in sections.*

In a library that pretends to be classified and to attach importance to the subject of classification, such a condition is simply intolerable, yet it is the condition to which we have come in many separate parts and to which we are bound to come everywhere throughout the classes numbered on this system. These classes contained 70,000 volumes in 1883 when this method of numbering was given up. These same classes have since grown to over 116,000, yet the fact is to be faced that every volume must eventually be renumbered to save the whole from falling into confusion. Every year that this work is postponed increases the difficulty and expense, since accessions have to be numbered on the same old plan until the whole is changed. Austrian history was redeemed several years ago and changed over, South American history has been looked after by Mr. Bingham, and German history has been taken up by Professor Coolidge, and is being reclassified and renumbered (in part at his own charge) as an almost necessary preparation for incorporating with it the large addition which the "Hohenzollern Collection" brings. I say reclassified as well as renumbered, for though the renumbering is the essential thing, it is easy to make changes in classification at the same time, and with the experience of the last twenty years' work behind us, very real improvements can be made.

---

* To make this confusing result more easily understood, take a particular example. The second row of the third floor (numbered 23) is composed of nine sections, and each section contains, let us say, seven shelves, the whole numbered from right to left (or north to south), but the order of the books as originally arranged was naturally from left to right, that is, the succession of shelves *by subject* ran 2391–2397, 2381–2387, 2371–2377, 2361–2367, 2351–2357, 2341–2347, 2331–2337, 2321–2327, 2311–2317. When the row became so crowded by irregular growth that it had to overflow into the next row, and the shelf signification of the numbers was lost, the books had to be re-arranged in order of numbers and to take the new order 2311–2317, 2321–2327, 2331–2337, etc. Nothing more confusing or more violently destructive of the original system of classification could be imagined. In the next row, on the other hand, the shelves, still numbered from north to south, run from left to right (because the row faces in the opposite direction) and coincide with the succession of subjects. In every alternate row the difficulty recurs, but since the books of each row, no longer confined within their original limits, spread over an indefinite space, no help is to be had even from this apparent regularity in the recurrence.

The crowded condition of the shelves continues to impede progress and demands that constantly more and more time be given to shifting shelves and to contriving how to squeeze out a little more free space at different points. The 50 shelves reported last year as containing double rows of books have increased to 185; 3,800 shelves (instead of the 2,600 of last year) have been shifted so as to get free space where it is wanted; South American history has been moved from the third floor, and Swiss history and Dutch history from the fifth floor, of the East stack to the first floor of the West stack to make room for expansion, displacing the Directories and Registers (1,932 volumes) which have been moved into the basement of Robinson Hall. Most of the books previously moved to Robinson Hall have been boxed up to make room here for the Von Maurer books. With 3,729 volumes and bundles of newspapers in the basement of Perkins Hall, 3,539 volumes of recent gifts boxed up in Robinson Hall, 1,932 volumes of Directories and Registers, 5,370 volumes of Von Maurer and Hohenzollern books, and 123 volumes of earlier Canadian documents on shelves in the basement of Robinson Hall, and 3,570 volumes of medical books sent to the Medical Library in Boston, we have sent into exile altogether 18,263 volumes. Keeping watch on how much these books are missed, I find that in the course of the year we have had to send 70 times to Perkins Hall and 38 times to Robinson Hall, while requests for the books sent to the Medical Library are so frequent as to cause annoyance at the delivery desk, the old marks not having been cancelled on the cards in the public catalogue.

The loss of 92 volumes in the course of the year is reported, 46 from the stack, 35 from the reading-room, and 11 from the shelves for new books in the delivery-room. On the other hand, 34 books reported lost in previous years have been recovered. The net loss in twenty-one years has been 1,011.

CATALOGUE DEPARTMENT.

Mr. Currier, in charge of the catalogue department, presents the following facts and figures in regard to the work of this department.

The necessary retrenchment in expense fell most heavily on the catalogue department. The problem of cataloguing greatly increased accessions by a diminished staff was met by three modifications in our plan of work, all undesirable, but thought to be the least harmful that we could devise to suit the conditions.

CATALOGUE WORK.	1899-00.	1900-01.	1901-02.	1902-03.	1903-04.
Titles catalogued for College Library:					
Full and complete work	6,539	6,727	9,226	8,517	8,842
Continuations, analytical entries, etc.	3,037	5,958	4,263	4,450	5,573
Incomplete work	3,813	11,484	2,936	3,373	6,301
Total	13,389	24,169	16,425	16,340	20,716
Titles for Dept. and Special Libraries	2,378	3,361	6,594	3,846	4,121
Total titles catalogued	15,767	27,530	23,019	20,186	24,837
Cards added to Catalogue:					
Printed cards —					
College Printing Office	16,736	16,857	16,555	18,135	11,827
Library of Congress	. . .	. . .	2,700	5,440	7,011
A. L. A. Publishing Board . . .	2,616	6,849	3,709	4,076	5,916
Total	19,352	23,706	22,964	27,651	24,754
Written cards	6,703	6,597	8,455	6,728	15,570
Total	26,055	30,303	31,419	34,379	40,324

1. The number of titles printed by the College printing office was cut down and written cards substituted. The advantage of the printed card is that it is more legible and more compact, and that duplicate copies are to be had at very slight expense for insertion in the subject catalogue, for references in the author catalogue, for posting on the bulletin board, and for distribution to department libraries, to professors, and even to other libraries. The change to written cards has naturally been made where the least necessity for duplication existed.

2. We have thrown more of the labor of cataloguing department books on the department libraries. The theory is sound that all books added to the department or special reference libraries should be recorded in the central library as completely as if they belonged here, and that books belonging here should be recorded in the catalogue of the department library if they relate to the subject of the department. This theory we have tried for many years to carry out as consistently as we could, but this year we have had to be satisfied, in most cases, with making for department books simply an author entry on the official catalogue of this Library, omitting all record of the books on our public catalogue, and leaving the department librarians to make cards for their own catalogues. This works less injury to the department libraries than it would have done

ten or twenty years ago, for more of them have competent librarians, cataloguers or attendants of their own than was the case then; but the loss to the central library is not to be lightly regarded. We have, however, continued to catalogue in full some of the more important works received.

3. The abbreviated work on our regular cataloguing has been further extended and somewhat modified so as to obtain as satisfactory a result as possible. In the last few years we have had to be content to treat a good many titles summarily, giving each a single entry only on the official catalogue and omitting them entirely on the public catalogue. We have tried to improve upon this by reviving a method of "short cataloguing" resorted to many years ago when it was desired to finish up in as short a time as possible several thousand titles of old pamphlets, sermons, etc., which had never been entered on the public catalogue, though received in the Library long before that catalogue was begun (in 1864). Of these methods Mr. Currier says: —

> "The entry on the official catalogue only is unsatisfactory, because the titles are not available to the public, and again because the work is often unsatisfactory in itself, for it is done without investigation and without making cross references other than those which are imperatively demanded. This leads to confusion through the entry of anonymous books under the title even when the author can easily be found, to the entry of one man's works in two places when his name is given in different forms, and to the entry under one name of the works of two different men, etc. The consequence of this is that not only do students fail to find what they seek, but the chance of acquiring duplicates is largely increased. For books treated thus, if belonging to the unclassified sections of the library, the subject side is entirely neglected. It was therefore decided to take up the method of short work practised some years ago, and prepare cards for the public catalogue as rapidly as possible, with little or no bibliographic investigation. Some changes were made from the methods in vogue at that time. First, the main entry for these titles is written on a red-edged card, in order that at a future time the cards may be easily picked out for more careful revision. Other than this, no memorandum is kept of the titles so treated. Second, instead of making only an author card for these books, subject cards are copied wherever the subject heading can be indicated without too great labor, and whenever it is thought that a book would lose its usefulness by not appearing in the subject catalogue. Very technical books have no subject cards, as these are often difficult to classify and are in most cases well indexed in special bibliographies. The books in the unclassified sections of the library should be more freely entered on the subject catalogue than those well classified on the shelves. Manuals and popular treatises should always receive

subject entry because wanted by the person unacquainted with the field of knowledge concerned. Such persons go to the subject catalogue for books of this sort when they would not think of going there for books in their own fields of research. The bibliographic work done on each title is reduced to its minimum, size and pages are not noted and illustrations only when prominent, anonymous books are looked up in one or two likely places — but no research is done; some trouble is taken to distinguish authors of the same name in order to avoid confusion in the future, but no time is spent hunting for fore-names of an author. Work of the sort just described, performed rapidly but not carelessly, is in a very large percentage of cases fully as useful to the user of the catalogues. Cases will probably arise in the future where trouble will result from these abbreviated methods. The rarity of such cases will depend in large degree on the good judgment and general knowledge displayed in doing the work.

"The figures of the statistical report show that the number of Gore Hall books added to the public catalogue has been 15,604 this year, against 11,094 last, and 11,766 in 1901–02 — an increase of nearly 30% this year over last.

"This increase is due to several causes, to the cataloguing of 900 Molière titles, made possible by Mr. Hyde's gift, to the reduction in time spent on department work, to the introduction of temporary work, and to the increasing use of Library of Congress cards. These changes, enabling us to push along with the minimum delay the department books and the older and more puzzling books, left more time for the remainder from which many difficult books had thus been weeded out, and increased the number of Gore Hall books permanently disposed of."

Professor Bôcher's Molière collection has been catalogued by Mr. Ernest L. Gay under careful supervision by Mr. Currier, and is ready for the printer as soon as he is free to take it.

The Riant collection brought us many editions of Tasso; a number more have been lately added, so that we now have the rather surprising number of 246 editions and translations. These have been catalogued, partly by our own force, partly by Mr. R. B. Michell, who was last year Instructor in Romance Languages. Mr. Michell has added interesting notes on the characteristics and relations of the several editions, and the whole will be printed at an early opportunity. The printing of such lists as these of Tasso and Molière, like the printing of the Dante catalogue some years ago, makes it possible to remove from the card catalogue the corresponding entries under Tasso, Molière, and Dante. Cards representing a few standard editions suitable for general use remain in the catalogue, and additions made after the printed lists are complete are added as they come in.

The use of the printed cards furnished by the Library of Congress continues to give satisfaction and to be a great saving in expense. 7,011 of these cards have been used in the catalogue, against 5,440 the previous year, and the total cost of the cards, including duplicates for other departments, has been but $81.93 ($64.52 last year). The increasing use of these cards and of the cards issued by the A. L. A. Publishing Board for articles in various periodicals, society transactions, government documents, etc., is shown in the following table expressed in percentages: —

	1899–1900.	1900–01.	1901–02.	1902–03.	1903–04.
Printed cards, —					
From the College Printer . . .	64.2	55.6	52.7	52.7	29.3
From the Library of Congress . .	. .	. .	8.6	15.8	17.4
From the A. L. A. Publ. Board .	10.1	22.6	11.8	11.9	14.7
Written cards	25.7	21.8	26.9	19.6	38.6

The very large decrease in cards from the College Printer in 1903–04, and the very large increase in written cards is due to the special necessities of that year, and it is to be hoped may not be permanent.

ORDERING DEPARTMENT AND FINANCIAL CONDITION.

The table on the next page shows the income of our book funds, receipts from other sources for the purchase of books, and expenditure for books during the last six years.

The balance of $4,093 on the Treasurer's accounts would seem to show that our expenditure had been well within our income this year, but an unusually large number of bills ready just at the end of the year were necessarily passed over to the beginning of the next year, so that if allowance is made for unpaid bills at the beginning and end of the year, it is found that in each of the last four years our purchases have exceeded the income of our book funds by sums varying from $500 to $1,000, so that a free balance carried over in 1900 of nearly $4,200 has been diminished in 1904 to a little under $1,200. This fact, with the withdrawal of about $1,000 from the income heretofore assigned by the Corporation to book purchases, made it necessary for the Library Council this autumn to make its appropriations on even a more restricted basis than last year. The year upon which we are entering will still be a heavy one, since several thousand of last year's accessions arrived just at the end of last year and have to be provided for in this year's plans.

INCOME AND EXPENDITURE.	1898–99.	1899–00.	1900–01.	1901–02.	1902–03.	1903–04.
From book funds, —						
Balance from previous year .	$737	$5,028	$5,176	$4,547	$4,021	$3,197
Income of the year	18,301	18,510	19,279	19,944	19,450	19,970
Total available	19,038	23,538	24,455	24,491	23,471	23,167
Spent for books	14,010	18,362	19,908	20,470	20,274	19,126
Balance to next year	5,028	5,176	4,547	4,021	3,197	4,041
Special gifts, sales, etc. —						
Balance from previous year .	839	2,940	936	1,932	2,276	1,835
Received during the year . .	3,906	5,137	6,115	3,411	4,457	4,927
Total available	4,745	8,077	7,051	5,343	6,733	6,762
Spent for books	1,805	7,141	5,119	3,067	4,898	4,988
Balance to next year	2,940	936	1,932	2,276	1,835	1,774
Total spent for books, —						
College Library	$15,815	$25,503	$25,027	$23,537	$25,172	$24,114
Department Libraries (books ordered through Coll. Lib.)	3,869	4,748	4,484	7,245	7,389	6,214
Total	$19,684	$30,251	$29,511	$30,782	$32,561	$30,328

The work of the ordering department, in charge of Mr. Potter, is summed up in the following table, which gives the figures of the last three years and the averages of two previous five-year periods.

WORK OF ORDERING DEPARTMENT.	1890–95. Average.	1895–1900. Average.	1901–02.	1902–03.	1903–04.
New orders, —					
Total received and examined . . .	5,132	7,327	10,716	13,566	17,397
Already owned or ordered	1,193	1,725	2,826	4,921	6,930
Forwarded	3,800	5,036	6,696	8,477	11,041
Estimate of cost, —					
For the College Library	$9,079	$10,145	$14,590	$14,982	$16,995
For Departments	2,902	3,223	4,956	4,621	3,512
Total estimated cost	11,981	13,368	19,546	19,603	20,507
Shipments received from abroad . .	28	33	69	76	81
†No. of vols. bought for College Lib.	4,416	5,736	7,400	7,731	7,870
‡Total gifts examined and passed on	16,050	16,455	20,878	20,799	26,268

† Excluding volumes formed by binding periodicals and pamphlets, but including volumes received on exchange account from other libraries.

‡ Including both volumes and pamphlets. See p. 214.

The figures given under "New orders" include work done on the Von Maurer library in looking up the titles of the Von Maurer catalogue on our own catalogues, selecting those wanted, and dispatching the orders. The estimate of cost ($16,995), however, does not include these titles, as they were not paid for by the Library. It would have been quite impossible for Mr. Potter and his assistants to have carried the extra burden involved in accepting the Von Maurer library, and in selecting and buying books for the Hohenzollern Collection, had not Professor Coolidge very generously provided for a great part of it by employing Mr. Walter Lichtenstein, who has had full charge of looking up the Hohenzollern orders, and of receiving and checking off the books for this collection on their arrival. He has also, with additional assistance employed by the Library, checked off and arranged the Von Maurer books (except the Scandinavian section) when they arrived in the summer, and he is now engaged in classifying them.

Mr. Potter reports in regard to the work of the year: —

"There has again been a large increase in the amount of work to be carried on by the department. In my report of last year, I spoke of the great increase of work, and then gave figures showing the percentage of this increase over the two years previous. It was shown that the number of orders had at that time increased 33%, and the number of 'duplicates' (titles suggested for purchase which are found to be already in the Library or ordered) 96%. It seemed as though effective work by the staff as then constituted was impossible, and that it was inevitable that the work should fall behind. Some additional help was given to the department, but not enough to keep pace with the still increasing work. The number of orders handed in has increased 66% since three years ago, and the number of 'duplicates,' 165%. This constantly increasing proportion of duplicates to the number of orders handed in is a very serious matter. It seems, however, unavoidable with the growth of the Library, and especially with the greater use made of second-hand catalogues. In 1900–01, about 25% of the orders received proved to be duplicates; now 40% are duplicates. We have again fallen badly behind in the work, and the sending of orders has often been five or six or even more weeks in arrears. In a single day several hundred orders may be handed in, and perhaps on the following day as many more; and with large shipments of books coming at the same time, it is impossible, with the staff at our command, to avoid a long delay in forwarding these orders, vexatious as it may seem. Of course, the purchase of the Von Maurer library last year meant a great amount of work for the department; although the looking up of this collection was mostly done by special help, the consultations and correspondence incident to its purchase took a very considerable portion of my time. The special gifts, such as those for books on London, Paris, and other subjects, also necessitate that much time be devoted to reading catalogues, etc., although I could not give to this as much attention as would have been desirable.

"At the beginning of the year we made a change in the system of keeping accounts. The old book, in which the items charged against each fund were entered, had grown unwieldy through the increased number of funds, gifts, and departments. We therefore adopted a system of cards, — a card for each separate account. At the same time, we did away with the old scrap-book in which the invoices were pasted numerically, and adopted a series of files, keeping them alphabetically according to agent. On the whole, this new system has proved very satisfactory.

" We have bought fewer books at auction this year than in recent years, mainly through lack of time to go through the catalogues and make up the bids. We have continued the policy of delaying the purchase of many of the more expensive English and American books until they can be picked up either as remainders or in the second-hand market. This plan, for general works of travel or biography and other books for which there is no immediate demand, has proved very successful. As a general thing, we are able to buy such books at from one third to one half of the original price, and often within less than a year after publication. Of course there is a danger of the books being overlooked entirely, and of their going out of print and not turning up at all in the remainder or second-hand market; but the great economy of this method outweighs this disadvantage."

The accessions of the year have included the usual number of expensive works ordered on a special appropriation with the approval of the Library Council, among them, the Atti e memorie of the Academy of Mantua from 1868; the Journal of the Muséum Godeffroy, 5 vols., 1873–1902; the Monumenta ecclesiae liturgica, lately inaugurated in Paris by Cabrol and Leclercq; Lobineau's Histoire de Bretagne, 1707, 2 vols., and Morice's Histoire ecclésiastique et civile de Bretagne, 1750–56, 2 vols., with Mémoires, 1842–46, 3 vols.; Allen's Early Christian monuments of Scotland, and Gallway's great illustrated work on the crossbow; the first two parts of the series of Selected drawings from old masters in the Oxford University galleries and in the library of Christ Church; Berenson's Drawings of the Florentine painters; Migeon's hundred plates illustrating the Exposition des arts musulmans in Paris in 1903; the great work on Oriental carpets, published by the Austrian Commercial Museum; the splendid facsimile of the Breviarium Grimani of the library of St. Mark in Venice; a copy of Tyndale's New Testament of 1550; and other similar works, most of which I expect to mention in more detail in a list to be issued shortly. The additions to the Folklore collection have been unusually large, due to the gifts of

Mrs. Nickerson and Mr. Mullins, many of the books being early works on alchemy. The additions to the Ottoman collection have also been numerous and interesting.

THE ARCHIVES AND THE HARVARD COLLECTION.

Mr. P. H. Tufts has continued in charge of the Archives and the collection of printed matter relating to the University, but work on these two collections continues reduced to its lowest limits. We only try to keep in order the accessions currently received and to prevent the work from falling seriously behind.

WILLIAM COOLIDGE LANE,
Librarian.

THE GRAY HERBARIUM.

To the President of the University: —

Sir, — During the academic year 1903–04 the staff of the Gray Herbarium has consisted of a curator, two trained botanical assistants, occupied chiefly in determinative and monographic work, a librarian, a collector, and an assistant engaged in the mounting of specimens. The services of Mr. F. Schuyler Mathews and Mr. P. B. Whelpley as artists were temporarily secured, and Mr. J. R. Johnston was employed during a part of the summer of 1904 in the sorting of specimens.

The accessions during the year were unusually extensive, the more noteworthy being as follows:—(1) By gift or in exchange: from the United States Department of War, through Mr. E. D. Merrill, 912 plants of the Philippine Islands; from the California Academy of Sciences, 363 plants of California and 54 plants from the islands off the west coast of Mexico; from Bates College, 2748 specimens of the genus *Carex* from the herbarium of Chester Dewey, one of the early American specialists on this difficult group; from the United States National Museum, 179 plants of Mexico for identification; from the New York Botanical Garden, 147 plants from the Rocky Mountains; from the Missouri Botanical Garden, 434 plants of the Gulf States, being duplicates from the herbarium of the late Dr. A. W. Chapman; from Professor C. V. Piper, 265 plants of Washington State; from the Arnold Arboretum, 261 plants of the Rocky Mountains collected by Mr. J. G. Jack, and 153 herbaceous plants from China; from the Field Columbian Museum, through Dr. C. F. Millspaugh, 78 plants, chiefly from Yucatan; from Mr. J. H. Maiden, Government Botanist at Sydney, 198 plants of New South Wales, including many critically identified specimens of the difficult genus *Eucalyptus;* from Mr. T. S. Brandegee, of San Diego, 70 plants of Mexico and 60 from the Yukon district; from Professor F. Buchenau, of Bremen, 196 of the rarer plants of Europe from the Baenitz Herbarium; from the University of California, 219 plants of California; from Mr. Warren H. Manning, 200 specimens of grasses; from Miss Susan Minns, 162 miscellaneous duplicates, including many European grasses identified by the well known specialist, Professor E. Hackel; from Chaplain D. H. Tribou,

U. S. N., 51 plants of South Africa; from the Botanical Museum of Harvard University, 259 plants of Texas, collected by Mr. B. H. A. Groth, 138 plants of Australia, the 2nd fascicle of Neuman, Wahlstedt, and Murbeck's *Violae Sueciae Exsiccatae*, 227 plants of California, collected by Mr. J. G. Lemmon, and 76 miscellaneous duplicates; from the New England Botanical Club, 313 duplicates; from Mr. M. L. Fernald, 1241 plants of Maine to be used as exchanges. (2) Obtained by purchase: 248 plants of Missouri, collected by Mr. B. F. Bush; 380 plants of the Pacific Slope and 118 from Nicaragua, collected by Mr. C. F. Baker; 396 plants of Washington State, collected by Mr. F. Kreager; 305 plants of Virginia and West Virginia, collected by Mr. E. S. Steele; 695 plants of California, collected by Mr. A. A. Heller; 120 specimens of ligneous plants in continuation of Professor E. Koehne's valuable *Herbarium Dendrologicum;* 404 plants of the Gulf States, collected by Professor S. F. Tracy; 153 plants of Jamaica, collected by Mr. G. E. Nichols; 208 plants of the West Indies, collected by Mr. A. H. Curtiss. (3) Collected by members of the staff: by Mr. C. G. Pringle, 588 of the rarer and imperfectly known plants of the uplands of Mexico; by Mr. J. R. Johnston, the vascular plants collected on an expedition mentioned in the last report, amounting to 2960 specimens from Margarita Island, Venezuela, and 231 specimens from Trinidad; by Mr. Fernald, 5401 plants from Gaspé Peninsula, Quebec; by Miss Day, 180 plants of New Hampshire.

The entire number of specimens received during the year was 26,430. The number of mounted sheets of specimens added to the organized portion of the Gray Herbarium was 13,729. The Library of the Herbarium has been increased by 521 books and 244 pamphlets.

The historically important Dewey Herbarium, briefly mentioned above, was obtained from Bates College by a mutually profitable exchange arranged by Mr. Fernald. Besides the type-specimens of Dewey's own species of *Carex* the herbarium contained many types, co-types, and authentic specimens from the other early American caricologists, as well as some interesting European material. In return for the collection, the Gray Herbarium sent to Bates College a well selected and carefully mounted working herbarium of about 2,000 sheets.

In January the Gray Herbarium assumed the responsibility for the continuation of an extensive card catalogue of new species and varieties of American plants. This index, one of the most important bibliographical aids to students of American botany, had been carried on and published by Miss Josephine A. Clark, Librarian of the Department of Agriculture at Washington, who, through pressure of other duties, was unable to continue this work. When its publication was transferred to the Gray Herbarium the catalogue contained about 28,000 cards. During the remainder of the academic year 3,501 cards were printed and issued. While from its nature this work is important chiefly to American botanists, several of the larger European botanical establishments are among the subscribers, and the subscriptions are adequate to cover the expenses of clerical labor and printing required for its publication. The work is in charge of Miss M. A. Day, Librarian of the Gray Herbarium.

In June the botanists of the Gray Herbarium, the Cryptogamic Herbarium, and the Botanical Museum of Harvard University published, with the endorsement of the New England Botanical Club, a series of amendments to the Paris Code of Botanical Nomenclature for the consideration of the International Botanical Congress to be convened at Vienna in June, 1905. Several of these amendments have subsequently received the endorsement of the botanical staff of the British Museum of Natural History.

Three courses of instruction in Harvard College were given by members of the Herbarium staff, namely, a course on the local flora of New England and the Maritime Provinces of Canada, by Mr. Fernald; a half-course on Botanical Geography, by Dr. Greenman; and a research course on phanerogamic taxonomy, by the Curator.

During the summer Mr. Fernald, accompanied by Mr. J. F. Collins, of Brown University, and Mr. A. S. Pease, of Harvard University, made an exceptionally profitable collecting trip to Gaspé Peninsula, visiting regions not hitherto explored botanically. Dr. Greenman, accompanied by Mr. A. H. Moore, spent the month of September in the mountains of West Virginia in collecting for the Herbarium, greatly amplifying its representation of the flora of this region. The Curator collected about 400 specimens in central Illinois, to be used as exchange material.

A block of eight steel cases, with a united capacity of about 16,000 herbarium sheets, was set up early in the academic year, being the gift of a liberal anonymous patron. The use of steel in the construction of herbarium cases is an innovation, and it is gratifying to report that these cases have proved highly satisfactory in all respects. In their fire-proof and air-tight character (permitting the direct fumigation of the specimens by carbon bisulphide), as well as in their compactness, durability, and ease of access, they are much superior to any other form of herbarium case yet invented.

Mr. C. G. Pringle has continued his collecting in Mexico with the same success which has for many years rewarded his untiring labors in difficult botanical field-work.

Again, with its necessary expenses much in excess of its small income, the Gray Herbarium has been able, through the financial aid of many generous patrons, to complete its year without deficit. This result could not have been attained but for the devotion and liberality of the Visiting Committee.

The gifts for present use, which are specifically acknowledged in the Treasurer's Report, amounted to $5,250. A gift of $100 from Mr. E. F. Williams was received, to supplement the Gray Memorial Fund.

In the death of Mrs. Warren B. Potter, for some years a member of the Visiting Committee, the Herbarium lost a friend of great generosity, whose repeated gifts have been of the utmost importance in maintaining the work of the establishment.*

In regard to the crowded condition of the Herbarium building, the following words from last year's report may be quoted with increased emphasis: "The great need of the Herbarium is a new and fireproof building of ample size for the safe preservation of its scientifically invaluable but now dangerously congested collections. The floor cases, which it has been necessary to add from time to time, have now so largely filled the space in the Herbarium building that the work of sorting and distributing specimens is carried on only with the greatest difficulty, and it is no longer possible to offer to the numerous visiting specialists adequate or well-lighted table space for comfortable work."

During the year the staff of the Herbarium has published thirty-two papers, of which the more important are as follows: —

Arabis Drummondii and its Relatives. By M. L. FERNALD. *Rhodora*, V, 225–231.

Contributions from the Gray Herbarium, N. S., No. XXV. New and otherwise noteworthy Angiosperms from Mexico and Central America. By J. M. GREENMAN. *Proc. Am. Acad.*, XXXIX, 69–120.

Insecticides used at the Gray Herbarium. By B. L. ROBINSON. *Rhodora*, V, 237–247.

A new Kobresia in the Aroostook Valley. By M. L. FERNALD. *Ibid.*, 247–251.

Contributions from the Gray Herbarium, N. S., No. XXVI. A Revision of the Genus Flaveria. By J. R. JOHNSTON. *Proc. Am. Acad.*, XXXIX, 279–292.

---

* Mrs. Potter's important bequest to the Gray Herbarium, greatly increasing its endowment, was announced after the close of the academic year, and an account of it must, therefore, be deferred until the Report for 1904–05.

Two allies of Salix lucida. By M. L. FERNALD. *Rhodora*, VI, 1–8.

Preliminary Lists of New England Plants, — Juncaceae. By M. L. FERNALD. *Ibid.*, 34–41.

Contributions from the Gray Herbarium, N. S., No. xxvii. By B. L. ROBINSON. I. Diagnoses and Synonymy of some Mexican and Central American Eupatoriums. II. Synopsis of the Mikanias of Costa Rica. III. Notes on the Genus Mimosa in Mexico and Central America. IV. Notes on some Polygonums of western North America. V. New Spermatophytes from Mexico and Central America. *Proc. Bost. Soc. Nat. Hist.*, XXXI, 247–271.

The Identity of Anychia dichotoma. By B. L. ROBINSON. *Rhodora*, VI, 50–53.

Notes on Southwestern and Mexican Plants. By J. M. GREENMAN. *Bot. Gaz.*, XXXVII, 219–222.

New Species of Mexican Plants. By J. M. GREENMAN. *Zoe*, V, 183–187.

The Identity of Michaux's Lycopus uniflorus. By M. L. FERNALD. *Rhodora*, VI, 134–137.

The Green Alders of New England. By M. L. FERNALD. *Ibid.*, 162–163.

Contributions from the Gray Herbarium, N. S., No. xxviii. I. Revision of the Genus Sabazia. By B. L. ROBINSON and J. M. GREENMAN. II. Revision of the Mexican and Central American Species of Trixis. By B. L. ROBINSON and J. M. GREENMAN. III. Revision of the Mexican and Central American Species of Hieracium. By B. L. ROBINSON and J. M. GREENMAN. IV. Synopsis of the Mexican and Central American Species of Alnus. By M. L. FERNALD. V. Diagnoses and Synonymy of Mexican and Central American Spermatophytes. By J. M. GREENMAN. VI. Some new Species of Mexican and Nicaraguan Dicotyledons. By M. L. FERNALD. *Proc. Am. Acad.*, XL, 1–57.

B. L. ROBINSON, *Curator.*

THE BOTANIC GARDEN.

To the President of the University: —

Sir, — As Director of the Botanic Garden, I have the honor of presenting the following report for the academic year 1903–04.

I have received from Mr. Robert Cameron, Head Gardener, a brief account of the weather during that period so far as it affected our plants: —

> "The winter was exceptionally cold, and the greenhouses required much more coal and care than usual. The shrubbery suffered a great deal from the intensely cold weather, but our herbaceous plants, with their heavy covering of snow, wintered well.
>
> "The summer was cool and moist, and proved favorable to all of our plants. It is believed that all of our collections at the present time are generally in very good condition."

Comparatively few changes have been made in the arrangement of our plants in any of the systematic groups. A few transfers, regarded as necessary on account of the increasing size of some of our specimens, were carried out without disturbing the established sequence. It was found impracticable to install certain plants in the new special plots, as we had originally intended, but it is likely that these plans may be carried out during the coming year.

In very early spring it became apparent that the two sorts of destructive moths which now infest our neighborhood had established themselves securely in our grounds. Energetic measures were taken to destroy the nests of the brown-tail moths, and with good results, but the gypsy moths invaded some thickets of our choice plants, and made considerable headway before they could be checked. Our fine beech trees were severe sufferers and the foliage was badly injured throughout. At the time when the leaves were just beginning to develop, the beech hedge on the driveway became alive with the caterpillars of the gypsy moths, and complete destruction of the whole group was threatened. Assiduous spraying with poisons checked the ravages so successfully that by June the hedge was free from the pest and in fairly good condition. During the summer, more or less was done to destroy the moths in other parts of the Garden, but with little success, and at the present writing it is plain that the whole Garden is seriously imperiled. We are now having the nests of the gypsy moth saturated with creosote by expert workmen, who appear to be doing their work well. But we shall undoubtedly find in the spring that the destruction of the moths has been only partial.

Our palm-house and its wings were constructed about twenty years ago, and they have served a good purpose. Last summer when the plants were removed, as usual, to the shade under the maples, it became apparent that the whole building was unsafe. The sills, uprights, plates, rafters and sash were completely honeycombed by white ants and weakened by rot. At first it was thought that no repairs could be made, and removal of the entire building was in contemplation. But upon closer examination it was seen that a portion of the building could be saved to advantage, and therefore a contract was made with experienced builders to repair, glaze, and paint the whole. It is well known that such work is costly. In this instance we have been able, at an expenditure of about $2,000, to put the whole system in excellent condition, so that it can be fairly expected to last for at least fifteen years.

The Memorial Greenhouses and Laboratory have again proved their usefulness in every way. They are a distinct addition to our equipment. In the Laboratory Mr. Plowman has continued his researches upon the relations of plants to electricity, and the Director has pursued his studies on the characters of certain fibres and woods after impregnation with solutions of salts, and subsequent incineration.

Work at the Cuban Experiment Station of the Garden has been carried on during the past year under the immediate superintendence of Mr. Robert M. Grey. The weather has not been wholly favorable, but most of the experiments have resulted well. The most important investigations dealt with rice, maize, and ricinus; other studies considered a wide range of fruits and vegetables. Some of these results have been published in the American Journal of Science. Interesting reports are received each month from Mr. Grey and are accessible to any persons desiring to consult them. If the Station should continue to develop along its present lines, it is likely that the reports will be regularly published in a convenient form.

The Museum has received many additions during the year. Most of these specimens have been incorporated into our reserve, under their appropriate classes, while a few have been placed upon exhibition. The remounting of the Ware collection of Blaschka glass models has gone on without much interruption, and at this time only a few of the larger specimens are still on the original cardboards. Upon the plaques of plaster the specimens have a firm mounting and are more attractive. The entire collection has been revised as to its nomenclature, and new labels have been installed in all the cases. Dr. Greenman, of the Herbarium, has had charge of this work.

One of the most important improvements during the year is the change in the Nash lecture-room. By the liberality of Mr. Nash, the donor of the hall, a complete system of ventilation has been introduced, which promises perfect success. Mr. Nash also authorized the introduction of electric lights and of an electric lantern for projections. The costly system of ventilation and of lighting now recently brought into the room was not practicable at the time the room was built. Since that time effective modes of utilizing electricity for motors and lights have become well known. Mr. Nash gave permission to have the best forms of appliances obtained. Under the patient oversight of Professor Burke, the Inspector of Grounds and Buildings, the work has been completed to the satisfaction of everyone, and the lecture-room of the donor becomes even more pleasing than before, as a memorial gift.

Professor Robert T. Jackson submits the following account of the condition of the valuable collection of fossil plants now in the custody of the Botanic Museum. It will be remembered that this collection was brought together by the late Professor Agassiz and subsequently placed by the Director of the University Museum, Dr. Alexander Agassiz, under the care of the Botanic Department. Through the liberality of Mr. Elliot C. Lee, the Department has been able to construct permanent cases for the reception of these specimens and to have the whole collection studied by experts. Professor Jackson has given his time and services, and, under his superintendence, the work has been most thoroughly done.

"Mr. Joseph A. Cushman, in what time he had available, continued cataloguing the collection of fossil plants. 7,749 lots of plants have now been catalogued. Some additional types or figured specimens have come to light since the last report. In addition to work on the collection itself, a number of selected specimens have been purchased from the Elliot C. Lee Fund, to fill gaps in our series. Three persons consulted the collections this year, in connection with their work on fossil plants."

The meetings of the Overseers' Committee on the Botanic Garden have been fruitful. Substantial aid was secured by the members of the Committee, and, because it was thought by them that the present is not a good time to undertake a general subscription, they have done much towards meeting the annual deficit which confronts the management of the Garden. As soon as is possible, an effort will be made to increase the funds of the Garden to a point where its modest expenses can be met without yearly demanding subscriptions to meet the difference between our small income and our absolutely necessary expenses.

GEORGE LINCOLN GOODALE, *Director.*

THE ARNOLD ARBORETUM.

To the President of the University: —

Sir: — I have the honor to submit the following report on the progress and condition of the Arnold Arboretum during the year ending July 31, 1904: —

During the year Mr. J. G. Jack has given instruction in dendrology at the Arboretum to students of landscape-gardening from the Institute of Technology, to University students of forestry, and to a spring class of 26 special students, largely composed of teachers. The number of persons who come to the Arboretum to study the living collections, or to work in the library and herbarium, increases from year to year, and often severely taxes the space available for their use in the laboratories.

Among the large number of additions made to the living collections during the past year the most important are many species of North American Crataegus, and a collection of trees and shrubs sent from Peking. A critical catalogue of the plants growing in the Arboretum is greatly needed, and will be prepared as soon as it is practicable to do so.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. 7,443 plants (including grafts and cuttings) and 1,234 packets of seeds have been distributed as follows: To the United States, 6,889 plants and 169 packets of seeds; to Canada, 32 packets of seeds; to Great Britain, 45 plants and 140 packets of seeds; to the continent of Europe, 509 plants and 785 packets of seeds; to Japan, 103 packets of seeds; to India, China, and Java, 5 packets of seeds. There have been received during the year 3,044 plants and 277 packets of seeds.

During the year 6,190 sheets of dried plants have been added to the herbarium, and 888 sheets of duplicates have been distributed to other establishments. This is the largest addition which has been made to the herbarium in one year.

The library has received, by gift, 909 bound volumes and 330 pamphlets.

Practically all the dendrological literature to be found in the United States has now been examined for the Bradley Bibliography, and Mr. Alfred Rehder, who has direct charge of the work, has gone to Europe to continue it in the libraries of England and the continent.

I am glad again to express my thanks to the trustees of the Massachusetts Society for the Promotion of Agriculture for their annual grant of $2,500 for the maintenance of the Arboretum, and to the members of the Visiting Committee for their advice and assistance.

C. S. SARGENT, *Director.*

THE CHEMICAL LABORATORY.

To the President of the University: —

Sir, — At the beginning of the year the directorship of the Laboratory, for nine years filled with exceptional success by the late Professor Henry B. Hill, was taken over by Professor Sanger. Professor Richards became chairman of the Division of Chemistry, and Dr. Baxter librarian.

The changes in courses which accompanied this re-arrangement of the staff were as follows: Dr. Henry A. Torrey (A.B., Univ. of Vermont, 1893; Ph.D., Harvard, 1897) was called from an assistant-professorship of chemistry at the University of Vermont to take charge of the advanced course in organic chemistry (Chemistry 5), given heretofore by the late Professor Hill, and also to give the elementary course in the same subject (Chemistry 2), conducted last year by Dr. Baxter. Dr. Torrey has also been associated with Professor Sanger in the conduct of qualitative analysis (Chemistry 3). The course in industrial chemistry (Chemistry 11), given for the first time in 1902–03, by Professor Sanger, was omitted for this year, but in place of it was given a half-course (Chemistry 11*a*), not counting for a degree, in the same subject, by Dr. H. H. Pringsheim (Ph.D., Heidelberg, 1900).

The number of students in the several laboratory courses during the year, and in June, 1903, were as follows: —

	October, 1903.	January 1st, 1904.	June 1st, 1904.	June 1st, 1903.
Chemistry 1	394	371	369	336
Chemistry 3	132	123	122	127
Chemistry 4	45	42	44	39
Chemistry 5	40	37	37	18
Chemistry 6	26	22	22	11
Chemistry 9	21	18	..	..
Chemistry 10	..	..	17	22
Chemistry 12	9	9	..	..
Chemistry 13	..	..	6	6
Chemistry 20*a*	1	1	1	4
Chemistry 20*b*	5	5	5	5
Chemistry 20*c*	3	3	4	3
Chemistry 20*d*	6	6	6	5
Chemistry 20*e*	3	3	3	3
Chemistry 20*f*	2	2	2	..
	687	642	638	579

The number of students in the courses in which no laboratory work is given were as follows: —

	October, 1903.	January 1st, 1904.	June 1st, 1904.	June 1st, 1903.
Chemistry 2	62	60	..	..
Chemistry 7	..	..	15	13
Chemistry 11	12*	12*	12*	21
Chemistry 14	4	4	4	2
Total number of students under instruction	765	718	669	615

During the summer of 1903 the department received from Mr. Edward Mallinckrodt, of St. Louis, the generous gift of $1,000, to be devoted to the reading-room and purchase of books for the library. With this gift it was possible to fit the old reading-room with stacks, additional reading-tables, and lights. In addition, many reference books were bought, and, by an arrangement with the College Library, the current chemical journals are now kept on file in the reading-room, while the bound volumes of these journals, which heretofore constituted our chief library, are still kept in the room. An attendant is at hand during the working hours of the day, and from 7 to 10 on week-day evenings we are able to secure the service of Price Greenleaf students as attendants. The reading-room now offers to all students in the laboratory an excellent opportunity for study and reference. The library has also been enriched by further gifts of books and journals from Professor Wolcott Gibbs.

During the summer of 1903 the first-floor room, south, used for many years as a research laboratory, was divided into three parts, which gave greatly needed accommodations in the form of two private rooms for instructors in charge of courses on that floor, leaving a third room for the use of two or three research students. At the opening of the year it was evident, from the increased numbers in the regular laboratory courses in physical chemistry (Chemistry 6, 12, 13), that other accommodations must be found besides the small room in which had been placed, not only these students, but also the research students in that subject. Accordingly, the first-floor room, northwest, heretofore used for elementary chemistry (Chemistry *B*, discontinued in 1902, and Chemistry 1 prior to the construction of the shed laboratory in 1902), was given over to the use of the regular laboratory courses in physical chemistry. The former room was left for the research students, but it is too small even for these. Though not especially adapted for instruction in physical chemistry, the larger room serves for the present to provide for students in the courses assigned to it. In one corner of the room was also fitted up a dark closet for the use of the course in photo-chemistry (Chemistry 12).

---

* This was given as a voluntary course, not counting for a degree. The figure 12 is included only for comparison and represents the average number of students attending the course.

The small lecture-room on the second floor, south, was too small to accommodate the increased numbers in most of the courses originally assigned to it, and was, in addition, noisy and poorly ventilated. Accordingly, the space occupied by this room was utilized in fitting up two small research laboratories, of which the building was greatly in need. The abandonment of this lecture-room will throw an additional number of courses into the room on the same floor, east, which, with the exception of the large room in which are held the elementary lectures, is the only lecture-room we have. This room has, however, been made more useful by the addition of modern seats, and can be made to accommodate all the courses, with the exception of Chemistry 1, without serious interference between courses.

The following investigations were conducted during the year: Professor Jackson, in continuation of his work on orthoquinones, studied with Mr. H. A. Carlton the compounds of tetrabromorthoquinone with alcohols, adding several new compounds to these classes, and trying many fruitless experiments to determine their constitution. With Mr. F. W. Russe the action of ketones and aldehydes on tetrabromorthoquinone was shown to consist in a condensation of two molecules with removal of bromine, and some progress was made towards the solution of the perplexing problem involved in the action of organic acids on tetrabromorthoquinone. With Mr. R. D. MacLaurin the study of the tetrachlororthoquinone was begun, and progress was made in tracing its resemblances to and differences from the corresponding bromine compound. With Mr. P. A. Shaffer it was shown that the hexabromorthoquinone-pyrocatechin ether, like other orthoquinones, gives a compound with methyl alcohol. With the late Mr. A. D. Wyman a new method of making orthonapthoquinone was studied. With Dr. H. H. Pringsheim the investigation of the phenylenediimine was continued. With Mr. L. Clarke two new subjects of investigation were taken up,—the addition compounds of dimethylaniline with nitro bodies or quinones, and the bromine addition products of dimethylaniline. The first of these researches was brought to a satisfactory conclusion, and good progress was made with the second.

Professor Richards has made progress in his work upon compressibility and upon the transition temperatures of crystallized salts. The following additional investigations were carried out under his direction: Mr. G. E. Behr, Jr., continued the study of the free energy change of iron under many conditions, obtaining light on its occlusion and its passivity; Mr. R. W. Kent has studied nickel in the same way; Mr. G. S. Forbes has made a careful study of amalgam cells, and has shown the direction and extent of the deviation of their electro-motive forces from those predicted by the gas law at great dilutions; Mr. A. B. Lamb has studied the specific heat of aqueous solutions by a new method which gave satisfactory results; and Dr. R. C. Wells continued his investigation of the atomic weight of sodium, showing its value to be at least as low as 23.008, and finding evidence that Stas's value for chlorine also is slightly in error. Professor Richards received a second grant of $2,500 from the Carnegie Institution of Washington to assist these investigations.

Dr. Torrey studied with Mr. H. Hardenbergh the dissociation of phenoquinone and quinhydrone in benzol, and in general the action of neutral solvents on these compounds. The results of this work are ready for publication. With Mr. W. W. Farnum, Dr. Torrey continued his work on the action of ethylene dibromide on paranitrosodimethylaniline, studying especially the action of dilute nitric acid on dinitrosodimethylaniline ethylene. With Mr. W. H. Hunter the action of potassic iodine on chloranil and bromanil was studied, showing that, in the latter case, bromine was replaced by iodine. With Mr. H. B. Kipper a study was begun of the action of ortho- and metanitrobenzoyl chloride on polyatomic phenols.

Dr. Baxter began an investigation on the atomic weight of iodine, and determined the following ratios: silver to silver iodide, silver to iodine, and silver iodide to silver chloride. The results from the three series of analyses led to the value 126.975 for the atomic weight of iodine. Dr. Baxter also determined with accuracy the specific gravities of lithium chloride, bromide and iodide, and of silver iodide. Under Dr. Baxter's direction Mr. M. A. Hines undertook a determination of the atomic weight of cadmium through the analysis of cadmium chloride, and obtained the value 112.47 for this constant. Dr. Baxter received a grant of $500 from the Carnegie Institution of Washington for a research on the atomic weight of manganese.

Dr. Lewis studied quantitatively the decomposition of oxide of silver at temperatures above 300 degrees with interesting results. Under Dr. Lewis' direction, Mr. P. Wheeler studied the conductivity of solutions of potassic iodide in fused iodine; Mr. R. F. Jackson studied the overvoltage of the deposition of hydrogen upon mercury, and Mr. B. S. Lacy began a study of migration values in fused salts.

Dr. H. H. Pringsheim devised a rapid method for the estimation of chlorine, bromine, and iodine in organic compounds, by decomposition with sodium peroxide and subsequent determination of the halogen removed by the sodium.

Professor Sanger completed, with Mr. J. A. Gibson, the work on their method for the estimation of small amounts of antimony. With Mr. O. F. Black he worked out a method for the determination of arsenic in urine, — also a quantitative adaptation of the Guthzeit method for estimation of arsenic. With Mr. J. F. Langmaid he studied the action of pyrosulfuryl chloride and of chlorsulphuric acid on chromyl chloride. The following papers were published during the year: —

1. On the Action of Aniline upon Tetrabromorthobenzoquinone. By C. Loring Jackson and Horace C. Porter. *Am. Chem. Journ.*, XXX, 518.

2. Ueber Additionsprodukte mit Dimethylanilin. Von C. Loring Jackson und Latham Clarke. *Ber. d. deutsch. chem. Gesell.*, XXXVII, 176.

3. On certain Addition Compounds derived from Orthobenzoquinone. By C. Loring Jackson and Horace C. Porter. *Am. Chem. Journ.*, XXXI, 89.

4. The Action of Bromine on 2.6-Dibromparaphenylenediamine. By C. Loring Jackson and D. F. Calhane. *Am. Chem. Journ.*, XXXI, 209.

5. On Tetrachlordinitrobenzol. By C. Loring Jackson and H. A. Carlton. *Am. Chem. Journ.*, XXXI, 360.

6. On certain Derivatives of Trichlortrinitrobenzol. By C. Loring Jackson and Paul Shortt Smith. *Am. Chem. Journ.*, XXXII, 168.

7. On the Preparation of Formiminoethyl Ether. By H. B. Hill and O. F. Black. *Am. Chem. Journ.*, XXXI, 207.

8. Ueber die optischen Isomeren der β-Dihydrofurfuran-αα′-dicarbonsäure. Von H. B. Hill und F. W. Russe. *Ber. d. deutsch. chem. Gesell.*, XXXVII, 2538.

9. A new method for Determining Compressibility, with Application to Bromine, Iodine, Chloroform, Bromoform, Carbon Tetrachloride, Phosphorus and Water. By Theodore W. Richards and W. N. Stull. *Carnegie Institution Publications*, No. 7, December, 1903.

10. The Nephelometer, an Instrument for Detecting and Estimating Opalescent Precipitates. By Theodore W. Richards and Roger Clark Wells. *Am. Chem. Journ.*, XXXI, 235.

11. Note on a Method of Determining Small Quantities of Mercury. By Theodore W. Richards and Sidney Kent Singer. *Journ. Am. Chem. Soc.*, XXVI, 300.

12. Sources of Error in the Determination of the Atomic Weight of Nitrogen. By Theodore W. Richards. *Proc. Am. Philosoph. Soc.*, XLIII, 116.

13. A Rapid and Convenient Method for the Quantitative Electrolytic Precipitation of Copper. By Theodore W. Richards and Harold Bisbee. *Journ. Am. Chem. Soc.*, XXVI, 530.

14. The Significance of Changing Atomic Volume; IV. The Effects of Chemical and Cohesive Internal Pressure. By THEODORE W. RICHARDS. *Proc. Am. Acad.*, XXXIX, 581.

15. The Relation of the Hypothesis of Compressible Atoms to Electrochemistry. By THEODORE W. RICHARDS. *Trans. International Electrical Congress* at St. Louis, 1904.

16. A Revision of the Atomic Weight of Iron. Second Paper, The Analysis of Ferrous Bromide. By G. P. BAXTER. *Proc. Am. Acad.*, XXXIX, 245.

17. The Specific Gravities of Lithium Chloride, Bromide, and Iodide. By G. P. BAXTER. *Am. Chem. Journ.*, XXXI, 558.

18. The Specific Gravities of Cadmium Chloride and Cadmium Bromide. By G. P. BAXTER and M. A. HINES. *Am. Chem. Journ.*, XXXI, 220.

19. The Specific Gravity of Zinc Chloride. By G. P. BAXTER and A. B. LAMB. *Am. Chem. Journ.*, XXXI, 229.

20. Ueber ein Schnellverfahren zur quantitativen Bestimmung von Chlor, Brom und Jod in organischen Verbindungen mit Natriumsuperoxyd. Von H. H. PRINGSHEIM. *Ber. d. deutsch. chem. Gesell.*, XXXVI, 4244.

21. The Analysis of Organic Substances with the Help of Sodium Peroxide. By H. H. PRINGSHEIM. *Am. Chem. Journ.*, XXXI, 386.

22. Ueber den Gebrauch des Natriumsuperoxydes zur quantitativen Analyse organischer Substanzen. Von H. H. PRINGSHEIM. *Ber. d. deutsch. chem. Gesell.*, XXXVII, 2155.

Attention was repeatedly called by the late Director to the crowded condition of Boylston Hall, which has now reached a point where it may be said to impede seriously the progress of the department. We are for the present furnishing desk-room for our elementary students, but we are compelling a large part of them to work under unsanitary conditions. The intermediate courses are for the time being barely provided for, and a slight increase in these courses would necessitate exclusion of some applicants. Our research students are crowded into small and poorly adapted rooms, and their number now exceeds the desk-space which should be allotted to each man. The service of the building is hampered by inadequate storage-rooms, which are inconveniently situated with respect to most of the laboratories which they serve.

No extension of laboratory work is possible on account of lack of space. It is impossible, for instance, to supplement the lectures in elementary organic chemistry (Chemistry 2) by a course in organic preparations. The need of such a course as part of a general training, as an introduction to advanced work in organic chemistry, and as a preparation for a medical education, is every year more apparent. We can make no provision for laboratory work in industrial chemistry or in inorganic preparations. We can do no laboratory work in biological chemistry. We have no facilities for carrying on water analysis or general work in sanitary chemistry. Our room for gas analysis is absurdly unfitted for the purpose. Certain lines of physico-chemical research are impossible to carry out for want of room. Lectures in general chemistry are given in a room in which not over half of the large class can see and a large number can not hear well, while the construction of the room imposes a severe tax on the lecturer. All other lectures are given in one room, which, although sufficing at present, could not provide for more or larger courses. We are able to make no provision for small meetings of classes for lectures or recitation work.

No remedy seems to be possible for this state of things except the construction of a new and properly endowed laboratory, since a reconstruction of the old building would be architecturally difficult, and would involve a very great expense. Every part of Boylston Hall, from roof to cellar, has been utilized to the utmost extent. We are now in the position of not being able to offer inducements for chemical study commensurate with the reputation of Harvard University. We shall continue in this position until a new laboratory is built.

CHARLES R. SANGER, *Director*.

THE JEFFERSON PHYSICAL LABORATORY.

To the President of the University: —

Sir, — The students enrolled in the Department of Physics are distributed as follows: —

Physics	*B*	148
"	*C*	236
"	1	45
"	2	7
"	3	33
"	4	17
"	5	6
"	6	11
"	11	9
"	12	8
		520

Research Courses.	
20*a*	2
20*c*	3
20*d*	2
20*e*	1
	8

Physics *C* now occupies three large laboratories. The increased accommodations and the carefully arranged course of quantitative experiments make this elective a very attractive one. It is encouraging to note that students in comparatively large numbers take a course which requires regular weekly work and which cannot be crammed. The success of this elective is due to the constant effort of Professor Sabine to increase its instrumental appliances and to raise its intellectual level.

There are eight Graduate Students pursuing research courses in the laboratory, and every available room is occupied with these researches. The gift of Hon. T. Jefferson Coolidge for original research has greatly stimulated the spirit of investigation, as will be seen by considering the following list of work which is now in progress and in which important results have already been obtained:

Energy of the X-rays. J. M. Adams.
Index of refraction of liquids under high pressure. P. W. Bridgman.
Electric Double Refraction. H. L. Blackwell.
Magnetic Hysteresis. H. N. Davis.
Thomson Effect, or the conveyance of heat by electricity. Professor Hall.
Viscosity of Gases. J. L. Hogg.
Short Waves of Light. Dr. Theodore Lyman.
New Spectra of Fluorescence. Dr. H. W. Morse.
Investigation in Magnetism. Professor Peirce.
Resonance in Wireless Telegraphy. Dr. G. W. Pierce.
Investigations in Acoustics. Professor Sabine.
Investigation in Spectrum Analysis. Professor Trowbridge.

To illustrate the arduous labor involved in modern physical research I will select from the above list the work of Dr. Hogg and that of Professor Hall and of Professor Sabine. Dr. Hogg, in order to obtain the proper conditions for his observations, is obliged to work continuously, or, in other words, to make a run, during twelve hours or more, thus frequently carrying his work far into the night. Professor Hall also, in his research, is obliged to make continuous observations over long periods of time. In the case of both of these observers, outside disturbances often compel the repetition of such series of observations. Ball playing and the running track on Holmes Field have been the source of great annoyance. All of these sports could be enjoyed on Jarvis Field without additional expense to the University and without disturbance to the extremely important function of this Laboratory, — that of research. In order to obtain freedom from noise, Professor Sabine worked during a great part of the summer from midnight until five o'clock in the morning.

Two of the investigations now in progress, beside their scientific aspects, bear directly upon the application of science to the useful arts. These are the researches of Professor Sabine in Architectural Acoustics and Dr. G. W. Pierce's work on Tuning Wireless Telegraph Circuits. This work is the most quantitative that has been done in this important subject. Dr. Pierce has been enabled by varying the frequency of the sending apparatus two per cent. to change the amount of energy transmitted fifty per cent. This result encourages one to believe that individualization of wireless messages will ultimately be practicable.

The Physical Colloquiums were held every week during the past terms of the year, and were fully attended by Graduate Students and the officers of the Department. At these meetings the investigations in progress were discussed and criticized. Such opportunities of meeting a large body of instructors and students engaged in research constitute one of the great advantages in attending a large university. I have dwelt in some detail upon the spirit of work shown by students in this Department in order to enforce the point that the intellectual life in one of the great branches of science taught in the University was never so vigorous.

To keep constantly abreast with rapidly advancing physical science the Laboratory needs a larger power plant, a larger library, more underground rooms for obtaining conditions of constant temperature, and a liquid hydrogen plant.

At the meeting of the American Association, together with allied societies, during the Christmas recess, five members of the Physical Department read papers.

During the year the first volume of "Contributions to Physical Science" from this Laboratory was published. It is proposed to continue this publication each year and to maintain its present position as the leading publication in Physics in America. It is believed that it will have the important effect of making known our experimental resources to graduate students of other universities.

The following papers were published during this year: —

1. Experiments on the Deviation of Falling Bodies. By Professor HALL. *Proc. Am. Acad.*, 1904.
2. Generalized Space Differentials of the Second Order. By Professor PEIRCE. *Proc. Am. Acad.*, 1904.
3. Theorems concerning the Flow of Electricity in Solid Conductors. By Professor PEIRCE. *Proc. Am. Acad.*, 1904.
4. The Cooper Hewitt Mercury Interrupter. By Dr. G. W. PIERCE. *Proc. Am. Acad.*, 1904.
5. Resonance in Wireless Telegraph Circuits. By Dr. G. W. PIERCE. *Physical Review*, September, 1904.
6. Short Waves of Light. By Dr. LYMAN. *Astrophysical Journ.*, May, 1904.
7. On the relation of current density to the Hall effect in Gold. By Dr. T. C. McKay. *Proc. Am. Acad.*, 1904.
8. Influence of Occluded Hydrogen on the electrical resistance of Platinum. By Dr. W. E. McELFRESH. *Proc. Am. Acad.*, 1904.
9. Spectra produced by the Wehnelt Interrupter. By Dr. H. W. MORSE. *Astrophysical Journ.*, April, 1904.
10. Radium and the electron theory. By Professor TROWBRIDGE and Dr. ROLLINS. *Am. Journ. Science*, 1904.
11. Spectra of Gases at High Temperatures. Professor TROWBRIDGE. Printed in reports of World's Fair, St. Louis, 1904.

JOHN TROWBRIDGE, *Director*.

THE DIVISION OF ENGINEERING.

To the President of the University: —

Sir, — I respectfully submit the following report on the Division of Engineering for the year 1903–04.

The raising of the requirements for entrance to the Scientific School, and the possibility of obtaining in five years the academic and scientific degrees have served to induce many students of engineering to spend three years in the College before entering the Scientific School. The consequence has been a very marked increase in elections of engineering courses by College students. This is shown in the following table, made up to cover the enrolments for the past five years: —

	1899–1900.	1900–01.	1901–02.	1902–03.	1903–04.
Total enrolments in engineering courses	1666	1954	2014	2095	2274
Number of Scientific School students .	1508	1635	1633	1582	1654
Number of students not registered in Scientific School	158	319	381	513	620
Percentage of Academic students . .	9.5	16.3	18.9	24.5	27.3

It will thus be seen that the proportion of Academic students to Scientific School students has almost trebled in five years, and that 27.3% of the instruction offered by the Engineering Division is given to students not registered in the Scientific School.

The tendency towards college training previous to the professional training in engineering is also indicated by the list of graduates since the rule allowing students to take two degrees in five years has become operative. A brief table is made out for three years to show the proportion of engineering graduates who had previously received the degree of A. B. from Harvard College.

	1901–02.	1902–03.	1903–04.
Number of engineering graduates	18	19	25
Number who had previously obtained the degree of A.B. from Harvard	2	4	9
Percentage	11	22	36

This tendency is in the right direction, and should, if encouraged, build up a graduate professional school, analogous to the Law School. This seems highly desirable in order that the Division may do its best work. The only difficulty in the present arrangement is due to the increasing number of students taking instruction under the

Division, without a proportionate increase in the instructing staff. For a number of years the instructors have been overloaded, and have consequently been able to give little attention to professional research. Electrical engineering is now fairly well provided for. Civil engineering, however, is in need of an additional instructor; and mechanical engineering is suffering for lack of an adequate staff. The work of individual instructors cannot well be reduced under present conditions. Courses in engineering offered by the University form the minimum necessary parts of prescribed schedules leading to degrees in civil, mechanical, and electrical engineering. It is consequently impossible to lessen the work of instructors by omitting anything, without at the same time seriously impairing the system of instruction. The case is different from that in most other Departments under the Faculty of Arts and Sciences, where a large part of the work is elective and can be modified without real damage to an entire group of courses. From the point of view of a satisfactory standard, something will have to be done for the Division before long. Efficiency cannot be maintained with the present number of instructors. There remains, besides, the consideration of advanced and graduate work. It is extremely desirable to provide some election for students from the College and from other institutions.

Fortunately, the courses are so arranged that students may change easily from one branch of engineering to another. Especially is this true of electrical and mechanical engineering. This shifting takes place every year, and it may be seen from the Catalogue that the course in mechanical engineering has suffered in numbers in proportion as electrical engineering has gained. This may be ascribed in part to the gradual change in the devices used for power stations and manufacturing purposes throughout the country, but it is probably in larger part due to the lack of adequate facilities in mechanical engineering. The increase of equipment in the electrical laboratories made itself felt at once by the transfer of a number of students to the electrical courses. At present the laboratories of mechanical engineering are equipped simply for elementary work, and comparatively little can be done for advanced students. This points to the necessity of a considerable outlay for machinery.

The Summer Camp at Squam Lake has been very successful during the past two summers under the efficient management of Assistant Professor Hughes. His attention to its development bids fair to make it an extremely useful adjunct to the regular instruction given at Cambridge. It should be the place where a student may go to take only one subject at a time, thus concentrating his efforts upon the attainment of one end. This plan has worked admirably in the surveying courses, which are well adapted to camp life, and the results afford valuable evidence for other courses. During the past summer students were taken in descriptive geometry, graphical statics, resistance of materials, and applied mechanics, to the number of fifty-one enrolments. For their benefit the day was divided into two periods, and it was found easily possible to hold their attention to a single subject for six or eight hours without fatigue. The woods and lake afford healthful relaxation, free from the distractions of Cambridge and Boston. Judging from the experience of the summer, it seems possible for a student to work at in-door studies for ten weeks in the country without losing his vigor for the fall term. The vacation habit is bad when it means three months of idleness every year, and it would seem worth while for the University to try seriously the experiment of putting other subjects besides those pertaining to engineering into the summer camp for College students. At present few courses given in Cambridge under the auspices of. the Summer School count for the degrees, but the summer work at Squam Lake is intended almost wholly for Harvard students.

During the past year some of the members of the Department have been able to take up important work outside the regular routine. Professor Kennelly was secretary of the International Electrical Engineering Congress at St. Louis, and as such has charge of the publication of a large number of papers contributed by electrical engineers of America and Europe. There will be three large volumes of this notable work. Professor Johnson was able to direct the working drawings for the Stadium and to make all the calculations for structural strength. This involved a large amount of detail, which was admirably carried out.

The following papers were published during the year: —

The Repulsion Motor. By C. A. ADAMS. American Institute of Electrical Engineers.

Leakage Reactance of Induction Motors. By C. A. ADAMS. International Electrical Congress, St. Louis.

On the Mechanism of Electric Power Transmission. By A. E. KENNELLY. *Electrical World and Engineer.*

Efficiency Curves of Constant-Potential Transformers. By A. E. KENNELLY. *Electrical World and Engineer.*

The Alternating-Current Theory of Transmission Speed over Submarine Cables. By A. E. KENNELLY. International Electrical Congress, St. Louis.

High-Frequency Telephone Circuit Tests. By A. E. KENNELLY. International Electrical Congress, St. Louis.

Two Elementary Constructions in Complex Trigonometry. By A. E. KENNELLY. *The Annals of Mathematics.*

The Electrical Resistance of Bearings. By A. E. KENNELLY and C. A. ADAMS. *Electrical World and Engineer.*

On the Parallel-Working of Delta and Star-Connected Three-Phase Transformers. By A. E. KENNELLY and S. E. WHITING. *Electrical World and Engineer.*

The Present Status of the Edison Storage Battery. By A. E. KENNELLY and S. E. WHITING. International Electrical Congress, St. Louis.

The Use of Superheated Steam and of Reheaters in Compound Engines of Large Size. By L. S. MARKS. American Society of Mechanical Engineers.

Some Recent Tests of the Weight of Crowds. By L. J. JOHNSON. *Engineering News.*

Design of the Steel-Concrete Work of the Harvard Stadium. By L. J. JOHNSON. *Journal of the Association of Engineering Societies.*

Balancing Steam Engines. By IRA N. HOLLIS. Naval Institute (for Midshipmen at the Naval Academy).

Descriptive Geometry — An Elementary Treatise. By J. A. MOYER. Press of Harvard University, and John Wiley & Sons.

In addition to the above, the members of the Department have been generous contributors to the *Harvard Engineering Journal.*

IRA N. HOLLIS.

THE PSYCHOLOGICAL LABORATORY.

To the President of the University: —

Sir, — The most important event for the development of experimental psychology in Harvard University during the last year has been the completion of the plans for Emerson Hall and the beginning of the work thereon. The Philosophical Department eagerly awaits the early opening of the new building, since it will at last give excellent quarters for all the work, — the elementary and the advanced work in Logic, Ethics, Psychology, Aesthetics, History of Philosophy, Metaphysics, and Sociology. It is hoped especially that the external bringing together of the various philosophical activities will reënforce in the academic community the consciousness of the inner unity of all philosophical branches and of their central importance for any scholarly work. But it is by psychology above all that the new building is most urgently needed. Even the most elementary courses have suffered by the present situation. The large introductory course in psychology has had to be given by the Director of the Psychological Laboratory in the New Lecture Hall, and every piece of apparatus used for experimental demonstrations has had to be carried from Dane Hall to Kirkland Street. Emerson Hall will have under one roof the collection of psychological instruments and a lecture hall sufficient in size, even if the introductory courses come to have over one hundred men more than at present. But the chief advantage accrues to the research work and the more advanced psychological courses. The Psychological Laboratory will contain twenty-three rooms, adjusted to the various needs of special investigations, and care has been taken to profit in every way from the experiences which the recently built laboratories of other universities have gathered as to the details of desirable arrangement. We can expect to have in Emerson Hall a model psychological laboratory, well equipped for nearly every line of psychological research, not excluding research into the mental life of animals.

The instruction during the last year has been essentially the same as in the foregoing, but the Department welcomes the plan of Dr. Yerkes to develop his half-course on Genetic Psychology into two half-courses, the one devoted to Comparative Psychology and the other to Mental Development. The first one confines itself to Phylogenetic, the second to Ontogenetic development. The experimental training course in elementary laboratory work has been improved by the publication of a manual for the laboratory work by the two assistants of the Laboratory, Dr. Holt and Dr. Yerkes. The chief stress of the laboratory activity has lain again on the research work, which has been carried on vigorously by the instructors of the Department and fourteen Graduate Students, of whom two were members of Radcliffe College. Two of the investigations have been accepted as thesis work for the Ph.D., those of Mr. Bell and of Mr. Boswell. Three of the young investigators already had the Ph.D. Degree; one of them, Dr. Urban, has come over from Vienna, Austria, to carry on his investigations in the Harvard Laboratory. A number of these investigations will appear in the second volume of the Harvard Psychological Studies; but some of them have been published in the Psychological Review, in the Journal of Comparative Neurology and Psychology, in the Journal of Philosophy, Psychology and Scientific Methods, and so on.

An outline of the chief lines of our work will show especially that the Laboratory tries to avoid all one-sidedness in research work, offering thus opportunities for advanced study to psychologists of the most varied interests, — to students of psychology, for instance, who approach it from the point of view of future physicians or of future philosophers, of pedagogues or of artists, of zoölogists or of sociologists. And yet in spite of the great variety of subjects appearing on the surface, there is a certain inner unity running through all the work. It might be characterized by a special interest in the relation between sensory and motor processes, an interest which reflects itself somewhat in every one of the investigations, and which is bound up with the theoretical conviction that the greatest present need of psychology is a stronger emphasis on the psycho-motor phenomena encountered in the study of psychic activities.

Mr. F. M. Surrey, who started from the problem of fusion of tactual sensations, has developed his work into a general examination of the influence of tension and strain on touch impressions. Dr. C. T. Burnett has given the greater part of his time to the question as to how far the motor impulses are determined by abnormal positions. He has studied at the same time the rôle of associations in aesthetic processes. Mr. H. A. Miller has started an experimental study of the influence of voluntary movement on memory images. He has worked out, at the same time, a system of tests for the psychological examination of school children. Miss H. Kleinknecht has made a careful investigation as to the mutual inhibition of quickly succeeding optical impressions. Dr. D. C. Rogers has studied some new illusions in optical, tactual, and acoustical localization. Mr. B. T. Baldwin has continued his important investigations as to the coöperation of ideas in their influence on the train of associations. Mr. C. L. Vaughan has begun a much ramified study on the motor power of ideas. Mr. C. H. Johnston has studied the mutual influence of simultaneous feelings and their coöperation in bodily expression. Dr. F. M. Urban has examined the influence of feeling on the blood circulation. Mr. L. E. Emerson has begun interesting investigations into the nature of melody, studying combinations of tones which do not stand in musical relations. Miss E. H. Rowland has begun her work on the psychology of the aesthetic influences of visual repetition, a research which carries onward the previous investigations in the Laboratory on symmetry and on unequal division. Mr. F. P. Boswell has brought to an end his interesting study on irradiation of optical impressions, while Dr. E. B. Holt has continued successfully the optical work on visual anaesthesia during eye-movement, and also his investigations in stereoscopic seeing.

In animal psychology the following investigations have been pursued with gratifying results. Mr. J. C. Bell has completed his careful studies on the senses and reactions of the crayfish. Mr. J. E. Rouse has continued his study of the reactions of the pigeon to stimulation by light, and also extended his work to an investigation of the memory and of more complex associated processes of the birds. Dr. R. M. Yerkes has completed his study of the space perception of tortoises, and made considerable progress in an investigation of the phenomena of inhibition and reënforcement in the frog.

The very successful course in Experimental Psychology given, during the Summer School, by Dr. Yerkes, and counted towards the degree of A.B., completed the year's work of the Laboratory.

HUGO MÜNSTERBERG,
Professor of Psychology.

THE OBSERVATORY.

To the President of the University: —

Sir, — Two of the most experienced computers of the Observatory, Miss Anna Winlock and Mrs. I. W. Eddy, have died since the date of the last annual report.

Miss Winlock was the eldest daughter of Professor Winlock, the former Director of the Observatory, and began her astronomical work soon after the death of her father in 1875. She assisted the late Professor W. A. Rogers in the reduction of his meridian circle observations, including those of the zone between 49° 50′ and 55° 10′ north declinations, and after his death she took charge of the reduction of those still remaining unpublished. In addition to this work, she undertook many other contributions of importance, some of them belonging to the department of theoretical astronomy. Her care, efficiency, and good judgment were of great value to the Observatory.

The sudden death of Mrs. Eddy interrupted her work in the reduction of the meridian circle observations of the second zone, from 9° 50′ to 14° 10′ south declination, upon which she had been employed since the summer of 1889. She took much interest in this work, and displayed, in carrying it on, great patience and zeal. She lived to see it nearly completed, although not published, and the degree of accuracy it may prove to possess will depend, in a great measure, on the computations on which she was engaged.

The study of the problem of aid to international research in Astronomy has been continued during the year. A second pamphlet has been issued, and the present needs of the astronomers of the world are well shown in the replies to a circular letter issued for that purpose. It seems self-evident that a donor can secure a greater return in scientific results for his gifts, if aided in their expenditure by the astronomers of the world rather than by a single institution, and that coöperation and combined action should yield the same advance in Astronomy, as in industrial enterprises. The fact that this Observatory has a small fund which is being used for this work, although it might be expended here, does not indicate that its own needs are less urgent. These needs are becoming so imperative that they are pointed out in a special section of this report. Attention is also directed to the discovery of a ninth satellite of Saturn, and to the large number of variable stars discovered in certain portions of the sky, discussed with the work of the Bruce Telescope; also to the important additions to the equipment of the Observatory, mentioned under the Anonymous Gift of 1902. The acquisition of the 60-inch Common Telescope, which it is hoped will prove the most efficient and convenient instrument of its kind in the world, is described in the section devoted to the 12-inch Meridian Photometer.

OBSERVATORY INSTRUMENTS.

East Equatorial. — Nearly all of the observations with this instrument have been made by Professor O. C. Wendell, and have been of the same general character as in previous years. Over seventeen thousand photometric light comparisons have been made, principally with the polarizing photometer with achromatic prisms. A large part of these measures relate to variable stars of the Algol type, and serve to determine the forms of the light curves and the times of minima. Many stars, especially those of a red color, have been suspected of variability by several observers, but as the changes do not appear to be regular, it has been impossible to decide whether these changes are real, or are due to errors of observation. With the photometer mentioned above, the accidental errors are so small that the nature of the changes can be readily determined. It appears that in some cases these changes are sudden and probably irregular. Measures have also been made of nine asteroids, to determine the variation, if any, in their light. From 2608 measures of Iris (7), it appears that this asteroid varies by about a quarter of a magnitude in a period of about $6^h\ 12^m$.

With a second photometer, adapted to the measurement of adjacent stars, measures have been made of o Ceti and of numerous double stars. 17 eclipses of Jupiter's satellites, making 768 in all, have also been observed with this instrument.

About 115 variable stars of long period have been followed by Argelander's method. 1025 observations of these objects have been made by Miss Cannon with the 6-inch West Equatorial on 88 nights, and in 200 cases the variable was too faint for observation. Each observation consists of a comparison of the variable with a brighter, and with a fainter star. 1403 observations on 159 nights were made in the same way by Mr. Campbell, generally with a 5-inch telescope, or opera glass. In 100 cases, the variable was too faint for observation. He has also made 1800 photometric settings on various objects. 174 similar observations have been communicated by Mr. J. H. Eadie, 146 by the Halsted Observatory, 129 by Miss A. S. Young, 103 by the McCormick Observatory, 50 by Senor Pereira, and 29 by the Vassar College Observatory. From these, combined with our own observations, monthly statements are made of the brightness of these variables, and early copies are sent to each observer. They are also published in *Popular Astronomy.*

Meridian Circle. — As in the previous year, the observations made with this instrument have been confined to frequent determinations of clock error, chiefly made by Miss M. F. Michaelis.

The work of completing the reductions of the observations of the zone —9° 50′ to —14° 10′ has been principally directed, during the past year, to the repetition of computations of the zone constants suspected of error, and to the comparison of different sections of the work, for the purpose of detecting systematic variations. An investigation of the residuals in declination, of the fundamental stars in different zones, was about half completed at the end of the year. It had already shown the existence of two systematic variations, each with an annual period, depending respectively upon zenith distance and upon time.

The reductions of the observations made by the late Professor Rogers, during the years 1879 to 1883, have been continued by Miss S. C. Bond. They were supervised by Miss Anna Winlock until the time of her lamented death, already mentioned, and have since been continued upon the same system. New arrangements have been made for their further prosecution by Miss Bond and other computers. The papers relating to the work have been collected and arranged by Mr. Dunne, who has also begun work upon the values of the inclination, the collection of material for which was reported last year.

12-inch Meridian Photometer. — With this instrument, 92,396 settings have been made by the Director, on 153 nights. In all, 429,992 settings have been made in six years. The measurement of all the Durchmusterung stars in zones 10′ wide, at intervals of five degrees, has been continued. This work is substantially completed for zones from + 30° to —20°, and for zones at intervals of ten degrees from + 30° to the North Pole. About one half of the observations required to complete the intermediate zones at + 35°, + 45°, and + 55° have been made. A zone of stars at declination —25° has also been observed, to determine the scales of the Cordoba and Cape Durchmusterungs. A large number of measures of sequences of stars in clusters, of comparison stars for variables, and other miscellaneous objects have also been made.

The observations with the various forms of meridian photometers have furnished a scale of photometric magnitudes, and measures of large numbers of standard stars of various degrees of brightness. The first meridian photometer had apertures of two inches. Between 1879 and 1882, nearly a hundred thousand measures were made with it of four thousand stars, including all those of the sixth magnitude and brighter north of declination —30°. The second photometer had apertures of four inches, and has been in nearly continuous use since 1882. More than a million measures, of about sixty thousand stars of the ninth magnitude and brighter, have been made with it. This instrument has been sent three times to Peru, and thus stars in all parts of the sky have been measured according to the same system. Since 1898, the 12-inch Meridian Photometer has been in regular use, and the observations have furnished large numbers of standards of the twelfth magnitude and brighter. Stars, however bright, can now be measured with this instrument, as well as with the smaller meridian photometers, by reducing the light of the real star, instead of that of the artificial star, by means of a wedge of shade glass. The continuous work of twenty-five years, including more than a million and a half observations, has thus furnished a standard scale of magnitudes, which has been extended systematically to fainter and fainter stars. It now appears desirable to carry this work still further, so that it shall include the faintest stars that can be seen. The photometer can be attached to any telescope however large, and by reducing the light of the real star, rather than that of the artificial star, precise measures of the light can be made even if the atmospheric conditions are poor. Recently, the 60-inch reflecting telescope, constructed by the late A. A. Common, was offered for sale, but at a price beyond the means of the Observatory. Fortunately, a portion of the Anonymous Fund of 1902, described below, remained unexpended, and, through the friendly mediation of Professor Turner, Mr. T. A. Common consented to dispose of the instrument upon terms that should lead him to be regarded as a contributor of a large part of the cost. The instrument has arrived safely in Cambridge, and is to be mounted according to a plan proposed for the large reflector of the Yerkes Observatory. The position of the eyepiece will be fixed and always directed towards the South Pole, and the observer and recorder will work in a warm room. Attaching the photometer described above to this instrument, we expect to have not only the largest, but the most convenient instrument of its kind, with which accurate measures can be made of the light of all stars, from the brightest to the faintest known.

Henry Draper Memorial.

The number of photographs taken with the 11-inch Draper Telescope was 543, making 15,030 in all; with the 8-inch Draper Telescope, 1,116, making the total number 32,094. The entire number of photographs of the stars taken at Cambridge during the year is 5,286. Twenty-one eclipses of Jupiter's satellites, and five occultations, have been successfully photographed with the 11-inch Draper Telescope. A new field of useful work has been found for it, which will probably occupy its time for several years. Volume XXVIII, Part I, contains a careful study of the bright northern stars photographed with this instrument. It appears that a similar study may be made of the spectra of much fainter stars, if photographed with one prism and an exposure of about 60 minutes. This permits a much more detailed classification than is possible with the 8-inch Draper Telescope. A beginning has been made with stars of the fifth magnitude and brighter, not contained in Volume XXVIII. As many spectra of adjacent stars appear on the photographs, it is probable that this work can be extended to much fainter stars. Mainly from an examination of the 8-inch Draper and Bache telescopes, nine variable stars, one star of the fifth type, one in which the line Hβ is bright, two gaseous nebulae, three stars of the fourth type, and one star whose spectrum is peculiar, have been found by Mrs. Fleming. Besides these, four variables have been found by Miss Wells, and the Hβ line was found to be bright in one star, by Miss Cannon. Mrs. Fleming has also classified and measured the intensity of the spectra of 1,866 stars for the Southern Draper Catalogue. A study of the distribution of stars having different spectra has led to some curious results. It appears that the Milky Way is wholly due to stars of the first type, and that stars of the second and third types are nearly uniformly distributed throughout the sky.

The general plan of taking the photographs, as described in previous reports, has been maintained under the direction of Mr. King. In photographic photometry, a preliminary reduction gives the total brightness of the Sun and the Moon as —26.0 and —11.0 magnitudes, respectively. The brightness of a circular portion of the sky one minute of arc in diameter is about equal to that of a star of magnitude —6.0 on bright clear days, and + 11.0 on dark clear nights. These values are subject to various errors, among which are those due to the temperature of the plate at the time of exposure. Temperature affects not only the absolute sensitiveness of the plate, but changes the gradation of the densities obtained. The emulsion increases in sensitiveness down to about 0°F., where it apparently reaches its maximum. Saturn and the faint adjacent stars have been photographed simultaneously by reducing the light of the planet with a photographic shade. Errors in the screws in the driving mechanism of the various telescopes have been investigated visually and photographically. By changing the position of the polar axis in azimuth, equatorial stars were caused to trail in declination. Photographs of such trails furnish a complete record of the errors of the screw.

BOYDEN DEPARTMENT.

The station at Arequipa has remained under the charge of Professor Bailey. The number of photographs taken with the 13-inch Boyden Telescope is 113, making 10,881 in all; with the 8-inch Bache Telescope, 2,357, making 35,004 in all. The total number of photographs of the stars taken during the year is 4,064. Measures have been made on 15 nights, with the Meridian Photometer, mainly of bright standard stars, one in each ten degrees square. Numerous photometric measures have been obtained with the 13-inch Boyden Telescope. With the photometer in which the light of an artificial star is varied by means of a photographic wedge, 64 series of measures have been made of stars in the Cordoba and Cape Durchmusterungs, to determine the scales of these catalogues. Seventeen asteroids have also been measured on from 3 to 25 nights each. No periods have been determined with certainty, although two or three of these objects appear to show small variations in light. The relative brightness of the components of 36 double stars has been measured on three nights each. 411 observations have been made, by Argelander's method, of 50 southern variable stars of long period, by Messrs. Manson and Wyeth. A careful study of the cloudiness at the station has been made by visual observations. The work, in general, has been in many respects facilitated by the introduction of electric lights.

BRUCE PHOTOGRAPHIC TELESCOPE.

Each year new uses appear for the Bruce Photographic Telescope, which further justify the courage and wisdom of Miss Bruce in permitting a costly experiment to be tried when success was doubtful. When it was proposed, some astronomers denied that a large photographic doublet would show fainter stars than a small one, and few were ready to admit the advantages which such an instrument has proved to possess. During the last year, Professor W. H. Pickering has succeeded in establishing the existence of Phoebe, the ninth satellite of Saturn, and has proved that it appears on more than forty photographs. Although announced in 1899, and shown at that time on four plates, astronomers failed to confirm or accept it. The discovery has been the result of a laborious study continued over many months. The average time required to find it on each plate has been about four hours, forming a great contrast to the ease and rapidity with which the other satellites have been discovered visually. Half a century ago, Hyperion, the seventh satellite of Saturn, was discovered at this Observatory. It was then regarded as an extremely faint object. Phoebe is about two magnitudes fainter, or has less than a sixth of the light. Its most remarkable property is that while the motion of rotation of Saturn, and of revolution of its eight satellites is direct, that of Phoebe is retrograde. Although Phoebe has been seen on two nights with the Yerkes Telescope, it appears to be beyond the reach of other instruments visually, and hitherto no telescope but the Bruce has succeeded in photographing it. From a study of the Bruce photographs, Miss Leavitt has discovered no less than 313 new variable stars, mainly in the borders of large nebulous regions, 152 having been found in the Large Magellanic Cloud. From a study of the chart plates of long exposure, Mr. Frost has discovered a large number of asteroid trails, nebulae, etc., including 203 nebulae in Virgo, where only 58 are given in Dreyer's New General Catalogue. 394 photographs have been taken with the Bruce Telescope during the last year, 26 of them having exposures of four hours. Phoebe has been photographed on 12 plates. The total number of Bruce plates is 6,981.

BLUE HILL METEOROLOGICAL OBSERVATORY.

This Observatory is maintained by Mr. A. L. Rotch, who employs three assistants. In addition to the regular observations on the summit of Blue Hill and at the two lower stations, observations in the free air above the hill were secured by means of kites every month, and, when possible, on the day designated for international observations in the upper air. Data were obtained during fourteen kite-flights, at an average maximum height of 7,750 feet above sea-level, and once at a height of 14,660 feet. A discussion by Mr. Clayton of all the observations in the free air, in their relation to the diurnal and annual periods of temperature, humidity, and wind-velocity, and the vertical gradients of these elements, up to two and a half miles, is now in press as Volume LVIII, Part I. Through coöperation with the authorities of the St. Louis Exposition, the staff of the Blue Hill Observatory were enabled to obtain observations of temperature at the highest altitude which has been reached above the American continent. Four *ballon-sondes* were despatched from St. Louis during the month of September, and all were recovered, two having attained a height of nine or ten miles. A kite with the recording instrument, and photographs of the Observatory were included in the Harvard University exhibit at St. Louis.

MISCELLANEOUS.

Anonymous Gift of 1902.—In 1902, a gift of $20,000 was received by this Observatory, with only one condition, that the name of the donor should not be made known. The gift has proved especially valuable, since it has permitted certain much needed permanent improvements to be made. Among these are, first, a wing to the building containing the collection of astronomical photographs. This wing consists of a brick, fireproof building, thirty feet square and three stories high, which will store more than two hundred thousand glass photographs, and thus provide the space needed for this purpose for many years. Secondly, two 24-inch reflectors and one mounting of the highest grade. Thirdly, the 60-inch reflector and mounting described above. Fourthly, various smaller permanent improvements which otherwise would have been beyond the means of this institution.

Carnegie Appropriation.—The collection of astronomical photographs furnishes a history of the stellar universe which is far more complete than any that exists elsewhere. When an object is discovered in any part of the sky, we can generally state its condition on two hundred or more nights previous to its discovery, and extending over the last fifteen years. About fifteen women are regularly engaged in the care and study of these photographs. This number could be greatly increased, and yet could extract but a small portion of the facts of value contained in this collection. Regarding it as a library, each book is unique, easily destroyed, and contains a multitude of facts not recorded elsewhere. The Carnegie Institution courteously made an appropriation of $2,500, for the year 1903, to be used in studying these photographs. A corps of ten observers was at once organized, and devoted a portion of their time to the work during the year. Notwithstanding the loss in forming and disbanding the corps during this time, a large amount of material was collected. A number of investigations were undertaken in order to show the variety of uses to which the collection could be put. Eleven thousand measures were made of 122 photographs of Jupiter's satellites while undergoing eclipse. Nine thousand measures were made of 364 photographs of four Algol stars, taken while near the time of minimum. Measures were made of the positions and magnitudes of 1,500 stars in the cluster in Perseus, and 265 stars near the new star in Gemini. Measures were made of about 2,000 plates of nine recently discovered variable stars of long period. Numerous early photographs of stars of the Algol type, and other variables of short period, were also measured. A study of the variation in light of α Orionis was made from photographs taken with the transit photometer. Photographs of Nova Geminorum, taken before its discovery, were examined. A portion of the results has been published in Circulars Nos. 69, 70, and 84. It was expected that the grant would be continued, otherwise a portion only of these investigations would have been undertaken, the work completed, and the results published. This course was rendered impossible by the shortness of the notice, only twelve days before the expiration of the grant, that provision would not be made for the continuation of the work.

Needs of the Observatory.—The two preceding paragraphs show how advantageously money can be expended for permanent improvements, and for current expenses of the Observatory. As stated in the last Annual Report, it is believed that $50,000 could be expended to great advantage in this way during the next few years. Fireproof buildings are greatly needed for the library, for the photographic laboratory, and for the workshop. They need not be large or expensive, and such buildings, like those in the College Yard, should have names assigned to them, and would form admirable memorials. The study of the astronomical photographs should be placed on a permanent basis. The sum of $5,000 could well be expended annually in this work. About $3,000 could be used for routine observers who would receive twenty-five or thirty cents an hour. $1,000 should be used for more skilled assistants to supervise and prepare the material for the printer. $1,000 should be used for publication. In this way a vast amount of valuable material could be secured which should be promptly published in the Annals. It will be noticed that the increase in the income of the Observatory, during the last fifteen years, has been small in comparison with the great increase in our appliances. No provision has been made for the permanent use and publication of the results of the new 60-inch and 24-inch reflectors. Doubtless the future endowments of the Observatory may be large, but these do not provide for our present needs. It has been shown above that an immediate expenditure could be made, to great advantage. It is unfortunate that year after year we should be unable to avail ourselves of opportunities now existing.

Colorado Station. — The first expedition undertaken with the Boyden Fund was made to Colorado, in 1887. The Observatory is still under great obligations to Professor Francis H. Loud of Colorado College for aid in many ways, including much of his own time, the use of his grounds, etc. It has ever since seemed desirable that we might avail ourselves of his friendly aid in securing such observations as could be made to great advantage in the remarkably clear air of Colorado Springs. A plan is accordingly now being carried out which promises to give results of great value. By the aid of the Advancement of Astronomical Science Fund of 1902, a Cooke Anastigmat Lens has been sent to Professor Loud, and is now mounted and ready for work near Colorado Springs. It is expected that photographs showing the structure of the Milky Way, greatly superior to any that can be made here, will thus be obtained.

St. Louis Exposition. — An octagonal building, surmounted by a dome, was erected at St. Louis, in the space allotted to the University, to contain the exhibit of the Observatory. Five of the inner walls were covered with sixty-three glass photographs, which were illuminated by electric lights. This method, which was used by several other observatories at St. Louis, was first employed by this Observatory at the Paris Exposition in 1900. A novel feature of the present exhibit is a description of the photographs, printed on white paper and illuminated in the same way. An attempt was made to illustrate the variety of methods in use here, rather than to show a few regions of exceptional interest.

Library. — The Library of the Observatory has been increased by 382 volumes and 3,335 pamphlets. The total numbers of volumes and pamphlets in the Library on October 1, 1904, were 11,141 and 21,969, respectively. This collection, one of the finest of its kind in the world, is in constant danger of destruction by fire, and is scattered through the rooms of the Observatory. A suitable building to contain it is one of our most urgent needs.

Telegraphic Announcements. — During the last year, 16 bulletins have been issued, making 159 in all. Of these bulletins, four were received from Professor Kreutz, three from the Yerkes Observatory, two from the University of California, one each from five other sources, and four originated from this Observatory. The bulletins are sent gratuitously to such institutions, newspapers, and individuals as desire them, and are likely to make use of them. In general, when a cipher telegram is received at the Observatory, it is translated, printed upon the bulletin sheets by an autographic process, and mailed within an hour of the receipt of the original message. Several persons are prepared to take charge of the distribution, so that, in the absence of one, another is available. The distribution of the announcements by telegraph is continued to subscribers who wish to pay for the messages.

Astronomers are requested, as heretofore, to send announcements of their discoveries to this Observatory for transmission to the observatories of Europe and America. To secure prompt attention, it is requested that all cablegrams be addressed "Observatory, Boston," and all telegrams "Harvard College Observatory, Cambridge, Mass." All correspondence relating to telegrams and announcements should be addressed to the Director.

Publications.—The amount of material published this year is unusually large. Volume XLIII, Part III, Volume XLVI, Parts I and II, Volume XLVIII, Nos. 5, 6, 7, 8, and 9, Volume LI, Volume LIII, Nos. 1, 2, 3, and 4, and Volume LVI, No. 1, have been printed and distributed. Volumes XLIII, XLVI, XLVIII, and LI are thus completed. 18 pages of Volume XXXIX, Part II, Peruvian Meteorology, 1891 to 1895, 56 pages of Volume XLVII, Photographic Study of Variable Stars, 93 pages of Volume XLIX, Photometric Observations with the East Equatorial, 93 pages of Volume LII, Photometric Observations of Jupiter's Satellites, and 50 pages of Volume LIV, Part I, Discussion of Kite Observations at Blue Hill, are in type. The first forty-six Volumes of the Annals, and also Volumes XLVIII and LI, are therefore completed, with the exception of Volume XXXIX.

Fourteen circulars have been issued during the year. The numbers, titles, and dates are as follows:—

74. Variable Stars of Long Period. January 1, 1904.
75. Variability of Iris (7). January 27, 1904.
76. Stars having Peculiar Spectra. March 21, 1904.
77. First Supplement to Catalogue of Variable Stars. March 22, 1904.
78. Variable Stars in the Nebula of Orion. March 23, 1904.
79. Seventy-six New Variable Stars. May 26, 1904.
80. Six New Variable Stars. May 26, 1904.
81. Notes on Variable Stars of Long Period. May 30, 1904.
82. 152 New Variable Stars in the Large Magellanic Cloud. June 21, 1904.
83. Common's 60-inch Telescope. August 18, 1904.

84. Carnegie Grant of 1903. August 24, 1904.
85. The Anonymous Gift of 1902. August 27, 1904.
86. The Nebula of Orion. September 5, 1904.
87. The Ninth Satellite of Saturn. A New Variable in Hercules. September 12, 1904.

Besides these publications and the reprints, extracts, and notices of them, the following minor publications have been made by the officers of the Observatory: —

Fifty-eighth Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1903.
The Astronomical Observatory of Harvard College. Cambridge, 1904.
A Plan for the Endowment of Astronomical Research, No. 2. By Edward C. Pickering. Cambridge, 1904.
The Arequipa Station of the Harvard Observatory. By Solon I. Bailey. *The Popular Science Monthly*, LXIV, 6.
Direct and Retrograde Rotation of the Planets. By W. H. Pickering. *Astron. Nach.*, CLXIV, 201.
Recent Studies of the Martian and Lunar Canals. By W. H. Pickering. *Popular Astronomy*, XII, 77.
The Double Canals of Mars. By W. H. Pickering. *Ibid.*, XII, 385.
An Explanation of the Martian and Lunar Canals. By W. H. Pickering. *Ibid.*, XII, 439.
The Declination of BD. + 50°.2146. By Edward C. Pickering. *Astron. Nach.*, CLXIV, 127.
Comet 1904 a. By Edward C. Pickering. *Ibid.*, CLXV, 159.
Mitteilung betr. den Saturnsmond Phoebe. By Edward C. Pickering. *Ibid.*, CLXVI, 31.
Veränderungen auf dem Mond. By Edward C. Pickering. *Ibid.*, CLXVI, 91.
Note on Saturn's Satellite Phoebe. By Edward C. Pickering. *Ibid.*, CLXVI, 159.

EDWARD C. PICKERING, *Director*.

THE MUSEUM OF COMPARATIVE ZOÖLOGY.

To the President and Fellows of Harvard College: —

The following is a synopsis of the instruction given during the past academic year in the laboratories of Zoölogy, Geology, and Geography of the Zoölogical and Geological Sections of the University Museum.

Eleven courses in Zoölogy were given by Professors Mark, Jackson, Parker, Castle, and Drs. Rand and Petrunkévitch, assisted by Messrs. Cole, Larrabee, Smith, and four Sub-Assistants. Three hundred and six students attended these courses, while four courses in Zoölogy were attended by thirty-four students from Radcliffe College.

In the Departments of Geology and Geography eighteen courses were given to five hundred and twenty-four students, and five courses to seventy-four students of Radcliffe. These courses were given by Professors Shaler, Davis, Jackson, Ward, Jaggar, J. B. Woodworth, and Mr. Smith, assisted by Messrs. Bell, Goldthwait, Gregory, Richards, Tower, Wood, and Sub-Assistants.

In the summer school, under the direction of Professor J. E. Woodman of Dalhousie College, Halifax, two courses in Geology and one course in Physiography were offered. Professor Woodman was assisted by Messrs. H. T. Burr and F. M. Wilder. The courses were attended by thirty-nine students.

Influenced by the establishment of additional marine biological stations for research in Atlantic waters, the Faculty of the Museum petitioned the Council of the Boston Society of Natural History to so alter the deed of gift to the trustees of the Museum that the income of the Humboldt Fund could be extended for the use of students pursuing investigations at the new stations in Bermuda and at the Tortugas.

The various reports of the assistants in charge of the collections announce a gratifying list of accessions to the stores of the Museum. All departments of the Museum already feel the influence of the expedition by which, through the generosity of Mr. John E. Thayer, our collections are being enriched. The significance of Mr. Thayer's expedition is of especial value. A student of nature himself, he is the son of Nathaniel Thayer, who in 1865, in the early infancy of the Museum, supplied its distinguished founder with all the means for the famous expedition to Brazil, the fruits of which are the basis of the immense storage collections now at Cambridge.

Among the larger accessions for the year is the extensive Flood collection, chiefly birds, received through Mr. J. E. Thayer, and the donation by Professor H. P. Johnson, who was formerly a student at the Museum, of his large and valuable collection of marine annelids, mostly from the Pacific Coast. Professor Johnson's gift is of especial value as it contains his many types and figured specimens.

Much has been done toward developing the new palaeontological exhibits. Upwards of one hundred and fifty fossil vertebrates have been mounted by Mr. Nelson and placed on exhibition. To the reptilian fauna of the North American Room and elsewhere, Mr. Nelson has added some twenty of his excellent preparations of recent form, including a large Anaconda.

The Museum was fortunate in securing for a part of the summer the services of Miss E. Wood of the United States Geological Survey. With the help of Dr. Jackson she selected a large amount of material for the Palaeozoic Room, and it is hoped now that this room will soon be accessible to the public. A new case has been installed in connection with the exhibit, illustrating methods in Thalassography, and, with the new instruments and apparatus expected, the exhibit promises to be one of peculiar interest.

The additions to the Library, as reported by Mr. Henshaw, are 5,588 volumes, parts of volumes, pamphlets, and maps, making the total number of volumes upward of forty thousand and pamphlets upward of thirty-three thousand.

The publications of the past year include thirteen numbers of the "Bulletin," with 921 pages and 191 plates, and two numbers of the "Memoirs," with 357 pages and 108 plates. Of the two "Memoirs," one is the Report on the Sponges of Mr. Agassiz's "Albatross" expedition of 1891, by E. V. Wilson (No. XXV); the other, Mr. Agassiz's final Report on the Coral Reefs of the Maldive Islands. Five numbers of the "Bulletin" are reports on the collections of the different expeditions of Mr. Agassiz, and four numbers are contributions from the Zoölogical Laboratory. Volumes XLII, XLIII, XLV, XLVI, and XLVII of the "Bulletin," and Volumes XXV, XXVI, XXVII, XXX, XXXI, and XXXII of the "Memoirs" are now in course of publication.

W. McM. WOODWORTH,
Keeper of the Museum.

THE ZOÖLOGICAL LABORATORY.

To the President of the University: —

Sir, — The number of students from each of the several classes and departments of the University attending the courses in Zoölogy during the academic year 1903–04 is shown in the following table, the numbers printed in italics indicating students from the Lawrence Scientific School: —

Courses, 1903–04.	Grad.	Sen.	Jun.	Soph.	Fresh.	Spec.	Bussey.	Total.
Zoölogy 1	3	7+*2*	15+*8*	42+*10*	35+*10*	5+*13*	1	108+*43*=151
" 2	. .	4	9+*3*	19+ *5*	2+ *2*	1+ *1*	..	35+*11*= 46
" 3	3	5+*2*	9+*6*	1+ *2*	1	*2*	..	19+*12*= 31
" 4	3	1+*2*	1+*2*	*1*	. . .	*1*	..	5+ *6*= 11
" 5	4	2+*3*	2+*2*	*1*	. . .	*1*	..	8+ *7*= 15
" 9	3	1	. . .	*1*	. . .	. .	..	4+ *1*= 5
" 9*a*	. .	1	. . .	1+ *2*	. . .	. .	..	2+ *2*= 4
" 11	4	1+*1*	. . .	1	. . .	*1*	..	6+ *2*= 8
" 13	5	*1*	*1*	*1*	. . .	*1*	..	5+ *4*= 9
" 15	8	*1*	*1*	*2*	. . .	*1*	..	8+ *5*= 13
" 20	10	*1*	. . .	*1*	. . .	*1*	..	10+ *3*= 13
Sums	43	22+*13*	36+*23*	64+*26*	38+*12*	6+*22*	1	210+*96*=306

The following table shows the number of students of Radcliffe College who took courses in Zoölogy: —

Courses, 1903–04.	Sen.	Jun.	Soph.	Fresh.	Spec.	Total.
Zoölogy 1.	6	4	10	5	3	28
" 2.	. . .	. . .	2	. . .	. . .	2
" 3.	1	1	. . .	. . .	. . .	2
" 5.	1	1	. . .	. . .	. . .	2
Sums	8	6	12	5	3	34

At the beginning of the year Dr. Alexander Petrunkévitch was approved as Docent in Zoölogy to give, in the second half-year, a course in Cytology. No fundamental changes have been made in any of the courses of instruction as compared with the preceding year. Minor changes are noted in connection with the accounts of the several courses.

In Zoölogy 1, given by Professor Parker, the lectures on Evolutionary Zoölogy were rewritten and illustrated by living guinea-pigs and rabbits belonging to the laboratory, and reared by Professor Castle. The work of students in the laboratory has been facilitated by improved accommodations for storing separately the material and notes of each student, and a case has been built and placed in the lecture-room for such illustrative material as is most used in this course. By this means the janitor will be spared much time hitherto employed in transporting specimens from the fourth to the first floor and back again.

The Chief Assistant in this course in Harvard College was Mr. Grant Smith; the Sub-Assistants, Messrs. I. A. Field, A. D. Howard, and S. O. Mast. The Assistant in Radcliffe College was Mr. J. A. Long.

The number of lectures in Zoölogy 2, given by Professor Castle, was slightly increased (to thirty-six). To the animals studied in the laboratory was added Amphioxus, the time for this being taken from the time heretofore given to the study of the frog. The Chief Assistant in the course was Mr. L. J. Cole, Austin Teaching Fellow, whose place was taken, during his absence for a considerable part of the second half-year in Yucatan, by Mr. J. H. McClellan. The Sub-Assistants were Messrs. D. W. Davis and I. A. Field.

Dr. Rand conducted, as previously, Zoölogy 3. The lectures were substantially as in the preceding year, but in the interest of students wishing to take, in the second half-year, work in Neurology (Zoölogy 15), the lectures on the nervous system were transferred from the second to the first half-year. Mr. A. P. Larrabee was Assistant in the laboratory work. One student, Mr. J. L. Ulrich, undertook, jointly with the instructor, the study of a special problem in anatomy, the results of which will be later offered for publication. Some progress has been made in increasing both the demonstration material and that designed for use by students in their laboratory exercises. Dr. Rand believes that the course might be considerably improved by a plan which would diminish slightly the number of lectures, and increase the number of conferences, so that the correlation between laboratory exercises and lectures could be made more evident and instructive.

As for several years past, the laboratory work in Zoölogy 4, in both Harvard and Radcliffe, was under the immediate charge of Dr.

Rand, who also gave five lectures on the anatomy and histology of the Hirudinea. The remaining lectures, given by Professor Mark, covered about the same ground as in the previous year, and the material studied in the laboratory was Glossiphonia.

In Zoölogy 5 the lectures, by Professor Mark, dealt chiefly with selected problems, and were supplemental to the reading required on the general outlines of Vertebrate Embryology. In the laboratory less time than heretofore was given to the technical part of the work, and more to the study of chick embryos and preparations made from them. Dr. Rand had charge of the laboratory work both in Harvard University and Radcliffe College.

Professor Jackson's courses in Palaeontology (Zoölogy 9 and 9*a*) were larger than in the preceding year. Considerable addition was made to the teaching material, chiefly from collections made at the Bermuda Biological Station in the summer of 1903, by Messrs. T. Barbour, O. Bryant, and F. W. Carpenter.

The lectures in Zoölogy 11, by Professor Castle, were largely rewritten, and their preparation occupied a considerable portion of the instructor's time. Each of the eight students to whom was assigned a topic for special study made satisfactory progress, either in the accumulation of data, or otherwise, and the results of their work will ultimately be incorporated in reports on the various topics.

The lectures and the laboratory work in Zoölogy 13 were modified by reducing the amount of time given to nervous tissues, and adding a consideration of cartilage and cuticula. The course was thus made to include a study of representatives of all four classes of tissues; it was given, as previously, by Professor Parker.

Zoölogy 15 was also given by Professor Parker, as usual. The lectures were largely revised. The laboratory topics were in two cases identical with those pursued in Zoölogy 20. The results from studies on five of the eleven remaining topics will be presented for publication later.

There were enrolled in the course on Cytology, by Dr. Petrunkévitch, nine students. Two lectures a week were given during the second half-year, illustrated by an extensive series of microscopic preparations and followed by informal discussions. There were no examinations, and the course did not count toward the attainment of any degree. Some of the topics treated of were: The structure of protoplasm with relation to its chemical and physical qualities; the structure of the nucleus and the mechanism of cell-division; the *de novo* formation of centrosomes and the hypothesis of their individuality; the reduction division in ovogenesis and spermatogenesis, with special reference to the formation of tetrads; the meaning of fertilization and of parthenogenesis, both natural and artificial.

Researches (Zoölogy 20) were carried on during the year by thirteen students. Of these two were under the supervision of Professor Castle, three under Professor Parker, and eight under Professor Mark. As in the preceding year, additional time for research work was in a few cases gained by allowing the student to meet the laboratory requirements in some of the formal courses (11 and 15) by devoting his laboratory time in those courses to the topic of his research. Of the two students working under the guidance of Professor Castle, one — Mr. G. M. Allen — has presented the results of his studies in the form of a thesis for the Ph.D. degree. The studies of the other have resulted in showing that the alternative conditions of the optic chiasma in certain bony fishes are not hereditary. Satisfactory progress has been made by those carrying on their work under the supervision of Professors Parker and Mark. Messrs. F. W. Carpenter, Grant Smith, and Porter E. Sargent have presented the results of their work as theses for the Doctor's degree, and the theses have been approved by special committees appointed to examine and report upon them.

In June, 1904, the degree of Doctor of Philosophy was conferred on three candidates in Zoölogy: Mr. Glover Morrill Allen, whose thesis was on "The Heredity of Coat Color in Mice"; Mr. Frederic Walton Carpenter, whose thesis was on "The Development of the Oculomotor Nerve, the Ciliary Ganglion, and the Abducent Nerve in the Chick"; and Mr. Grant Smith, whose thesis was entitled "On the Eyes of Certain Pulmonate Gastropods, with Special Reference to the Neurofibrillæ in Limax maximus."

Professor Parker has conducted experiments on the lateral-line organs of fishes for the United States Fisheries Bureau, and, in conjunction with Miss Adele M. Fielde, on reactions of ants to material vibrations. He has also delivered a number of public lectures at the Brooklyn Institute of Arts and Sciences, and elsewhere, on human sense organs; has written a number of reviews for the "American Naturalist," and has had considerable editorial work to do.

Professor Castle is continuing his experimental study of heredity in guinea-pigs and rabbits, and breeding experiments with insects. He has published during the year "Contributions," No. 146, and has republished "Contributions," No. 136, with some additions and alterations, in *Science*, N. S., Vol. 18, No. 456, pp. 396–406, Sept. 25, 1903. Other publications not in the "Contributions" are: "The Heredity of 'Angora' Coat in Mammals." *Science*, N. S., Vol. 18, No. 467, pp. 760–761, Dec. 11, 1903; and "Sex Determination in Bees and Ants." *Science*, N. S., Vol. 19, No. 479, pp. 389–392, March 4, 1904. He has also written reviews published in the "American Naturalist."

Dr. Rand has completed a rather lengthy paper on "The Behavior of the Epidermis of the Earthworm in Regeneration," which will soon be published in Roux's "Archiv für Entwickelungsmechanik," and has nearly ready for publication — in collaboration with John L. Ulrich — a paper on "The Posterior Connections of the Lateral Vein of the Skate." He also has under way further studies on "Regeneration in the Earthworm."

Dr. Petrunkévitch has published "Künstliche Parthenogenese," Festschrift zum 70. Geburtstag des Herrn Geheimen Raths Prof. Dr. August Weismann in Freiburg i. B. Zool. Jahrb. Suppl. VII., 62 pp., 3 Taf.; and "Gedanken über Vererbung." Freiburg i. B., Speyer und Kaerner, 1904, 83 pp.

The Virginia Barret Gibbs Scholarship for 1903–04 was held by Mr. John H. McClellan, a graduate of the University of Michigan, and subsequently Instructor in Zoölogy in the University of Illinois.

Five persons, including one instructor, carried on work at Wood's Hole during the summer of 1904; one, at the Marine Biological Laboratory, and four, at the United States Fisheries Bureau. Of the latter, two were in the employ of the Bureau.

Two persons working at the United States Fisheries Bureau in Wood's Hole, and one at the Bermuda Biological Station received aid from the Humboldt Fund amounting in all to $92.85.

Professors Castle and Mark received from the Trustees of the Carnegie Institution of Washington a grant of $500 to aid in the study of questions of heredity.

The Zoölogical Club held meetings on Wednesday afternoons throughout most of the year. The topics presented were usually announced in advance in the "Calendar." There were twenty-five meetings, at which fifty-four papers were presented, twenty-nine of these being based on original researches. Under the auspices of the Club, a public lecture was given April 13, 1904, by Dr. Hans Gadow, of Cambridge, England, on "Southern Mexico and its Natural History."

Some of the results of the work carried on at the Bermuda Station during the summer of 1903 have already been handed in, and three papers based on this work have been printed; others are in preparation. These papers are published in various suitable journals as "Contributions from the Bermuda Biological Station for Research," and are numbered in the order of their publication. The three already published are: —

No. 1. COLE, LEON J. — Pycnogonida collected at Bermuda in the Summer of 1903. *Proc. Bost. Soc. Nat. Hist.*, Vol. 31, No. 8, pp. 315–328. pls. 20–22. July, 1904.
No. 2. GULICK, ADDISON. — The Fossil Land Shells of Bermuda. *Proc. Acad. Nat. Sci.*, Philadelphia, 1904, pp. 406–425. 3 maps and pl. 36. April [June 25], 1904.
No. 3. BOWDITCH, HAROLD. — A List of Bermudian Birds seen during July and August, 1903. *Amer. Nat.*, Vol. 38, No. 451, pp. 555–563. July–August [September], 1904.

There were fifteen persons enrolled at the Bermuda Station during the summer of 1904. Of these, six were, or had been, connected with Harvard University. It was found that Amphioxus existed in abundance at many localities, and the much rarer Asymmetron lucayanum Andrews was discovered for the first time in Bermuda. Living specimens of both these Acraniota were brought to Cambridge.

The retrenchment which has been compelled by the present condition of University finances has reduced by half the amount of money appropriated by the Corporation for the expenses of the Department and for the publication in the Museum Bulletin of Contributions from the Zoölogical Laboratory. This will necessitate the publication of a greater proportion of the Contributions in other journals than has hitherto been customary.

CONTRIBUTIONS FROM THE ZOÖLOGICAL LABORATORY FOR THE ACADEMIC YEAR 1903–04.

143. PARKER, G. H. — The Skin and the Eyes as Receptive Organs in the Reactions of Frogs to Light. *Amer. Jour. of Physiol.*, Vol. 10, No. 1, pp. 28–36. September, 1903.
144. HOWARD, A. D. — On the Structure of the Outer Segments of the Rods in the Retina of Vertebrates. *Amer. Nat.*, Vol. 37, No. 440, pp. 541–550. September, 1903.
145. BREED, R. S. — The Changes which occur in the Muscles of a Beetle, Thymalus marginicollis Chevr., during Metamorphosis. *Bull. Mus. Comp. Zoöl.*, Vol. 40, No. 7, pp. 315–382. 7 pls. October, 1903.
146. CASTLE, W. E. — The Laws of Heredity of Galton and Mendel, and Some Laws Governing Race Improvement by Selection. *Proc. Amer. Acad. Arts and Sci.*, Vol. 39, No. 8, pp. 221–244. November, 1903.

147. Carlton, F. C. — The Color Changes in the Skin of the so-called Florida Chameleon, Anolis carolinensis Cuv. *Proc. Amer. Acad. Arts and Sci.*, Vol. 39, No. 10, pp. 257–276. 1 pl. December, 1903.
148. Lander, C. H. — The Anatomy of Hemiurus crenatus (Rud.) Lühe, an Appendiculate Trematode. *Bull. Mus. Comp. Zoöl.*, Vol. 45, No. 1, pp. 1–28. 4 pls. January, 1904.
149. Peters, A. W. — Metabolism and Division in Protozoa. *Proc. Amer. Acad. Arts and Sci.*, Vol. 39, No. 20, pp. 439–516. April, 1904.
150. Hall, R. W. — The Development of the Mesonephros and the Müllerian Duct in the Amphibia. *Bull. Mus. Comp. Zoöl.*, Vol. 45, No. 2, pp. 29–125. 8 pls. June, 1904.
151. Bigelow, H. B. — The Sense of Hearing in the Goldfish Carassius auratus L. *Amer. Nat.*, Vol. 38, No. 448, pp. 275–284. April [June], 1904.

E. L. MARK, *Director.*

DEPARTMENT OF GEOLOGY AND GEOGRAPHY.

To the President of the University: —

Sir, — As Chairman of the Department of Geology and Geography, I have the honor to submit the following report for the year 1903–04.

There were no changes of note in the instruction given during the academic year 1903–04, as compared with that of the previous year. Geology *A* was given by Mr. P. S. Smith, and the following acted as assistants in the courses named: Mr. P. S. Smith, in 4 and 8; Mr. J. M. Bell, in 5; Mr. W. S. Tower, in *A* and *B*; Mr. J. W. Goldthwait, Austin Teaching Fellow, in 4 and 5; Mr. W. M. Gregory, in 11 and 14; Mr. R. W. Richards, in 22; and Mr. H. O. Wood, in 9 and 22. Messrs. A. K. Adams, L. O. Packard, and H. E. Simpson served as student-assistants in Geology 5.

In addition to the two elementary summer courses in geology and in physiography, given by Professors Shaler and J. E. Woodman, and by Messrs. H. T. Burr and F. M. Wilder respectively, four other more advanced courses were given, and thus a very notable extension of summer instruction in geology was brought about. After correspondence, conducted by Professor Davis, with the geological departments of a number of other universities, a plan was adopted for publishing a "Joint Announcement" in which all the field courses in geology, to be given by Chicago, Columbia, Harvard, Johns Hopkins, and Yale, during the summer of 1904, were described. The contribution made by Harvard included the following courses: S3*a*, Investigation in Pleistocene Geology (in New York State), Professor J. B. Woodworth; S3*b*, Investigation in Structural Geology and Physiography (in the Wahsatch Mountains), Professor Davis; S4*a*, General Field Geology (in the Black Hills, South Dakota, and the Big Horn Mountains, Wyoming), Professor T. A. Jaggar, Jr.; S4*b*, General Field Geology (in the Colorado Rocky Mountains), Mr. C. H. White, of the Department of Mining and Metallurgy. Students were enrolled in all these courses, and all the courses could, by vote of the Faculty, be counted towards the degree. Yale University agreed to give credit to those of its students who satisfactorily completed any of the courses, and the Massachusetts Institute of Technology did the same with reference to Course S4*a*.

Thus a very welcome spirit of coöperation was present throughout the whole undertaking, and it is sincerely to be hoped that the plan may be further developed in the summer of 1905. Several friends of the Department gave scholarships for use in the Rocky Mountain courses, thus greatly stimulating interest in this instruction, and making it possible for deserving students to take up the work from which they would otherwise have been debarred. These scholarships were awarded to graduates of Amherst and Cornell (Iowa) Colleges, now students in the Graduate School; a Harvard graduate, now teaching elsewhere; a graduate of the Massachusetts Institute of Technology, and a student at Yale University.

The Department gratefully acknowledges the following gifts: $5,000 from Miss Maria Whitney, to be known as the "Josiah Dwight Whitney Fund," the income of which is to be used for scholarships "to aid meritorious students in the study of field geology or geography in the summer months, preferably in the mountain region of the western United States"; $500 from several friends of the Department for four scholarships in the summer courses in geology in the Rocky Mountains; $200 from Mr. John L. Gardner for photographs from the governmental surveys; $200 from an anonymous donor to be applied towards the establishment of a meteorological observatory; $200 from two friends of the Department for special lectures; about $100 from a fund left by the New England Meteorological Society, to be expended in the purchase of meteorological instruments; $100 from Mr. George A. Gardner, of the Visiting Committee on Geology and Mineralogy, to be expended in building and installing cases in the geological exhibition rooms, and, through the generosity of Mr. Alexander Agassiz, a gift from the Museum of Comparative Zoölogy of some exhibition cases recently removed from the African room in that Museum. With the two last mentioned gifts, and with a slight addition from the funds of the Department, two cases have now been erected in the large exhibition room of the Geological Museum, and are ready for the installation of materials.

In November and December, 1903, six illustrated public lectures were given in the Geological Lecture Room on successive Friday afternoons, at 4.30 o'clock. The subjects of these lectures were as follows: 1. The Natural History of the Diamond, Professor Palache. 2. The Climate of the Philippines, Professor Ward. 3. The Glacial Geology of Southeastern Massachusetts, Professor J. B. Woodworth. 4. Evidences for Evolution illustrated by certain Fossil Types, Professor R. T. Jackson. 5. Some Geological Problems of the

Yellowstone National Park, Professor Jaggar. 6. The History of Niagara, Professor Davis.

Professor Shaler left Cambridge early in January, returning in June. During his absence, the remaining lectures in Geology 14 were given by Professor R. T. Jackson, and in Geology 4 by Professor Jaggar.

Professor Davis states that the preparation of a report on his journey across Turkestan in the summer of 1903, as a member of Mr. Raphael Pumpelly's Carnegie Institution Expedition, has occupied much time during the past winter. Lectures upon the journey have been given before the Geographical Societies of Boston, New York, Philadelphia, Baltimore, and Washington, as well as before the Harvard Travellers Club in Cambridge, and the Natural History Society and the Appalachian Mountain Club in Boston. Mr. Ellsworth Huntington, associate of Professor Davis in Turkestan, remained there after the return of the latter, and made an interesting journey through the heart of the Tian Shan to Kashgar in the Tarim basin of Chinese Turkestan, and thence westward to Ferghana in Russian Turkestan. His observations prove a succession of several glacial epochs, and corroborate some of Professor Davis's conclusions. The usual courses of instruction were given by Professor Davis during the academic year. In the advanced course (Geology 20), special studies have been made by several Graduate Students on shore forms of Lake Michigan, glacial cirques in the Rocky Mountains, river meanders and cut-offs, river systems of Iowa, piedmont fluviatile plains, glacial sand plains in the Sudbury valley, Mass., the gorge of the Tennessee river at Chattanooga, and other problems: these studies have for the most part been based on field work and extended by reading and discussion. The study of the gorge of the Tennessee river, by Mr. D. W. Johnson, instructor at the Massachusetts Institute of Technology, included two weeks of field work in the Chattanooga District. In the course on the Physiography of Europe (Geology 7), increased use has been made of graphic exercises, chiefly in the drawing of typical diagrams from large scale maps: this innovation has proved instructive and it will probably be systematically extended hereafter. During July, Professor Davis visited Utah with a small party of advanced students, to continue his studies of the mountain ranges of the Great Basin. In September he accompanied the excursion of the Eighth International Geographic Congress to the Colorado Canyon and Mexico.

Professor R. T. Jackson reports that the teaching collections in palaeontology are in good condition. Some additions were made by purchase, and a number of enlarged photographic diagrams for teaching purposes were added to the laboratory equipment.

Professor Ward reports the purchase, with the money left by the New England Meteorological Society, of two nephoscopes, of the Blue Hill pattern, especially constructed by Mr. S. P. Fergusson, and of a Richard thermograph and hygrograph. With the further anonymous gift of $200, above mentioned, it will now be possible to begin the establishment of a small working meteorological observatory, which is an absolute necessity if adequate instruction in meteorology is to be given. With two or three hundred dollars more, a comparatively complete instrumental equipment could be purchased. During the year, Stanislav Hanzlik, Ph.D. in meteorology of the University of Prague, a Graduate Student in this Department, devoted himself especially to a study of the climatology of the United States, and to an investigation of the movements of cyclones in the United States. A thesis prepared by him in Geology 26, on the "Geographical Distribution and Movement of Cyclones of High Velocity in the United States," is shortly to be published. During the summer, with the coöperation of the Librarian of the University, the meteorological and climatological books and maps on deposit in the Geological Museum were rearranged, classified and catalogued. The collection is now in excellent order. In September, Professor Ward attended the meetings of the International Geographic Congress in Washington and New York, and served as chairman of the section on Meteorology and Terrestrial Magnetism.

Professor J. B. Woodworth reports that in Geology 16 (Glacial Geology) Mr. W. S. Tower made a careful search of the coast north and south of Boston for evidences of change of level, and Mr. C. H. Paige, in addition to local field work, searched the New England reports for records of glacial striae and carefully plotted them on a map ready for publication. Three students continued the work of this course in the second half-year as members of Course 23. Mr. G. C. Curtis also prepared for publication a brief report on the elevated shore lines of Monhegan Island, Me. Partly to supplement the work on glacial geology, and partly to make use of a large number of instructive field localities south of Boston, Professor Woodworth now offers, in alternate years with Geology 16, a new half-course on the Carboniferous period. The rock collections of the laboratory of general geology were increased during the year by the purchase of a set of the Oscar Rohn collection of rocks illustrating the geology of the Lake Superior district. Mr. P. S. Smith gave to the laboratory his own collection of rocks from the Black

Hills of South Dakota. The Department is also indebted to Mr. George D. Keyser for specimens of crystalline rock salt from the lake beds near Gunnison, Utah. Sixty pieces of pumice from the streets of St. Pierre, Martinique, together with one volcanic bomb from Mount Pelée, were purchased. A Locke hand-level and a camera were added to the field equipment, and at the request of Professor Stanislas-Meunier, of the Museum of Natural History in Paris, Professor Woodworth has sent to that institution a small exhibit representing some recent studies of trails in the Saratogan sandstone. As a member of the New York State Museum, Professor Woodworth continued his field investigations during September, 1903, and in the summer of 1904, in New York and over parts of Canada from Ottawa to Beloeil Mt., Quebec, and in parts of Vermont. During the winter and spring, reports were prepared upon the surface geology, including the elevated shore lines of the Mooers' quadrangle in Clinton County, N. Y., and upon the larger question of the ancient water-levels of the Hudson and Lake Champlain valleys. As contributory to the preparation of these reports, trips were made to Washington, D. C., during the mid-year period, and to certain localities in the Hudson valley during the April recess.

Professor Jaggar reports that the advanced field course in geology was taken by fourteen students, who completed the survey of the metropolitan district of Boston, which was commenced in 1900, at the time when the work was first given into Professor Jaggar's charge. A large topographic map was prepared, showing the entire metropolitan district, with topography compiled from the best available sources, and on this map all of the geological records of the past five years were inscribed in color. This map will be put on exhibition beside the large Boston Model, which is now open to the public. Mr. R. W. Richards made a large number of photographs in illustration of the field work of the year, and Mr. Wood supervised the cataloguing and recording of all the specimens which have been collected in the metropolitan district. Professor Jaggar continued his work as a teacher in the Massachusetts Institute of Technology, and one student from that institution was given a course in experimental geology in the Harvard Laboratory in the spring of 1904. In December, 1903, Professor Jaggar spent three weeks in a mining camp in Searchlight, southern Nevada, making investigations for the Quartette Mining Co., of Boston.

Mr. P. S. Smith conducted the course in elementary physiography along the same lines as in previous years; and, as previously noted, also acted as assistant in Courses 4 and 8. Mr. Smith spent much time in the preparation of a thesis on the Copper Sulphide Deposits of Orange County, Vermont, which was accepted for the degree of Ph.D. The degree was conferred in June, 1904. During the summer of 1904, Mr. Smith was engaged in a study of the surface features of the southeastern portion of Cape Cod, in connection with the retreat of the ice sheet and the development of present day topography.

The committee on the Gardner Collection of Photographs (Professors J. B. Woodworth, chairman, and R. DeC. Ward, and Mr. P. S. Smith) reports as follows: —

	Photographs.	Slides.	Negatives.
Accessions since last report	12	740	45
Catalogued since last report	4	472	..
Unidentified views	253	30	..
Duplicates	144	51	..
Broken	..	1	..
Last accession No., June 27th	5654	4308	..
Number now in Collection	5495	4520	1109

The noteworthy additions during the year consist of a set of stereopticon views purchased from Professor H. W. Fairbanks, of the University of California, and of a collection of 382 slides purchased from the series of the U. S. Geological Survey. This purchase was made by means of a fund generously given to the Department by Mr. John L. Gardner. Mr. Smith continued throughout the year to give much time to the cataloguing and care of the collections.

The following publications were issued during the year: —

By W. M. Davis: —

The Mountain Ranges of the Great Basin. *Bull. Mus. Comp. Zoöl.*, Geol. series, VI, 1903, pp. 129–177, 7 pls.

A Summer in Turkestan. *Bull. Amer. Geogr. Soc.*, XXXVI, 1904, pp. 217–228.

A Flat-topped Range in the Tian Shan. *Appalachia*, X, 1904, pp. 277–284.

Geography in the United States. *Proc. Amer. Assoc. Adv. Science*, 1904; *Amer. Geol.*, XXXIII, 1904, pp. 156–185.

By R. T. Jackson: —

Charles Emerson Beecher. *Amer. Nat.*, Vol. XXXVIII, 1904, pp. 407–426.

By R. DeC. Ward: —

The Climate of South America. *Bull. Amer. Geogr. Soc.*, XXXV, October, 1903, pp. 353–360.

Our Changeless Winters. *Boston Transcript*, February 20, 1904.

"Sensible Temperatures." *Bull. Amer. Geogr. Soc.*, XXXVI, March, 1904, pp. 129–138.

The Climates of the United States: An Outline. *The Geographical Teacher*, II, June, 1904, pp. 212–218.

Reviews and Notes in *Science*, *Bull. Amer. Geogr. Soc.*, and *Journal of Geography* (throughout the year).

By J. B. WOODWORTH: —

Bibliographic Aids in Geology, Geography, Mineralogy, Petrography, Palaeontology, and Meteorology (with shelf key). Printed by the University. 3 pages.

Review of the Evolution of the Earth's Structure, by T. M. Reade. *The Nation*, 1904.

Administrative Report of work done in New York. Embodied in Report of the State Geologist, Dr. F. J. H. Merrill, for 1901. *55th Annual Report of the N. Y. State Museum*, Albany, 1903, pp. r9–r14.

By T. A. JAGGAR, Jr.: —

The Initial Stages of the Spine on Pelée. *Amer. Journ. Sci.*, Vol. XVII, January, 1904, p. 34.

The Eruption of Pelée, July 9, 1902. *Popular Science Monthly*, January, 1904, p. 219.

The Eruption of Mount Pelée, 1851. *Amer. Nat.*, Vol. XXXVII, No. 445, p. 51.

By P. S. SMITH: —

The Copper Deposits of Vermont (with H. L. Smyth). *Eng. and Min. Journ.*, LXXVII, April 28, 1904, pp. 677–678.

By E. HUNTINGTON and J. W. GOLDTHWAIT: —

The Hurricane Fault in the Toquerville District, Utah. *Bull. Mus. Comp. Zoöl.*, Geol. series, VI, 1904, pp. 199–259.

ROBERT DEC. WARD, *Chairman*.

THE DEPARTMENT OF MINING AND METALLURGY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The number of students enrolled in the programme of Mining and Metallurgy at the beginning of the academic year 1903–04 was 68. The corresponding figures since 1894–95, when the course was established, are given in the following table, which includes also the total attendance in the Lawrence Scientific School during the same years, as well as the percentage of the whole number which the mining students formed.

	'94–95	'95–96	'96–97	'97–98	'98–99	'99–00	'00–01	'01–02	'02–03	'03–04
Students in Mining and Metallurgy .	6	7	13	17	19	30	42	67	75	68
Students in the L. S. S.	308	340	368	410	415	495	507	549	584	548
Per cent.	1.9	2.1	3.5	4.1	4.6	6.1	8.3	12.2	12.8	12.6

During the past three years this proportion has been practically constant at about one-eighth of the total enrolment. It therefore seems probable that no great gain in the number of students in Mining and Metallurgy is to be expected in the near future, except as part of a general increase in the Lawrence Scientific School.

The table below shows the growth of the Department in instructors, including assistants, and in courses offered during the same period.

	'94–95	'95–96	'96–97	'97–98	'98–99	'99–00	'00–01	'01–02	'02–03	'03–04
Instructors . . .	1	1	2	2	3	4	4	7	8	9
Full courses . . .	..	..	2	2	2	2	4	4	4	5
Half courses . . .	..	..	3	3	4	5	7	9	11	11

In the programme in Mining and Metallurgy in the Scientific School a maximum of twenty-six courses is required for the degree of S.B. Twenty-three of these are taken in Cambridge during term time, while the other three come in parts of two summer vacations, and cover an aggregate of seventeen weeks. The manner in which the work of the student is distributed between the lecture-room and the laboratory, as well as between the various departments of study, is exhibited in the table below, which does not include the work of the summer vacations.

Hours of Required Attendance, in the Lecture-room and Laboratory, in the Four Years' Course in Mining and Metallurgy.

	Mining.			Metallurgy.		
	Lectures.	Laboratory.	Total.	Lectures.	Laboratory.	Total.
Language	210	. .	210	210	. .	210
Mathematics	210	. .	210	210	. .	210
Physics	112	140	252	112	140	252
Chemistry	90	526	616	118	750	868
Engineering	448	462	910	448	462	910
Geology and Mineralogy . .	245	294	539	231	246	477
Mining	252	273	525	147	273	420
Metallurgy	126	105	231	168	189	357
Total	1693	1800	3493	1644	2060	3704

This table shows that a total of about 3,500 hours is required in the case of students who specialize in Mining, and about 3,700 hours from those who specialize in Metallurgy. The average for each course is about five and a half hours a week. If to this be added the time that must be spent outside the lecture-room and laboratory, in reading, solving problems, and preparing theses and reports, it is probable that the average time given by the student to each course in this programme does not fall below nine hours a week.

Experience shows that only students of more than average ability and diligence can complete the programme. Many who enter on it drop out and secure easier degrees in General Science or by transferring to Harvard College. That the graduates of the Department are of more than average ability and earnestness is proved by the fact that a large majority of them have obtained the degree with distinction. The total number of men who have attained the degree of S.B. in Mining and Metallurgy down to and inclusive of 1903–04 is thirty-two. Twelve of these have taken the degree *cum laude*, six *magna cum laude*, and two *summa cum laude*.

The most important event of the year to the Department was the establishment of the professional degrees of Mining Engineer and Metallurgical Engineer for a fifth year of work.

The reasons that led the Faculty and the Governing Boards to institute these degrees were the following: —

Except Harvard and the Massachusetts Institute of Technology, all the important universities and scientific schools in the country, in which Mining and Metallurgy are taught, give the Engineer's degree to students who have completed the course. These degrees, therefore, are generally recognized as the usual and proper certificates of the satisfactory completion of such work as is carried on under this Department, and our graduates, particularly in the early years of their professional life, have been at a disadvantage in not having them.

With the increasing demands on the Mining and Metallurgical Engineer, his training, even with an extensive utilization of the vacations, cannot be compressed into four years, but ought to include at least five years of study. With the present organization of the Lawrence Scientific School, this means that a year must be added to the ordinary four years' course. It seemed to the Faculty better to give for the purely technical work of a fifth year a technical degree that accurately indicates the nature of work done, rather than the degree of Master of Science, which may stand for work in any one of a dozen lines of scientific specialization.

With the high requirement adopted, these degrees will become very desirable, and the Department expects that most of its better students will take them.

In the rearrangement of the programme, made necessary by the establishment of the professional degrees, the Department took occasion to try the experiment of massing the class-room work of the third and fourth years, as far as possible, in the mornings of three days of the week, leaving the afternoons and alternate days free for laboratory or field work. When lectures come in non-consecutive hours, the intervening hour is usually wasted by the student, since the time is too short to accomplish anything in the laboratory or to return to his room for study. Furthermore, by massing the laboratory work, it is possible to accomplish very much more in one whole day than in two half-days, and in one half-day than in broken hours. It is too soon to say whether this experiment will be successful and commend itself to the students. Experience so far seems to indicate a radical difference of opinion between the members of the fourth-year class, who unanimously favor it, and the members of the third-year class, who find it disadvantageous. No good reason for this difference of opinion has yet been discovered.

The Department also undertook another interesting experiment in the form of a Coöperative Summer School of practical mining in conjunction with Yale, Columbia, and the Massachusetts Institute of Technology. Professor John Hays Hammond of Yale suggested this experiment, for which Mr. George Crocker, of San Francisco, furnished the money. At meetings of a committee made up of Professors Hammond and Chittenden of Yale, Richards of the Massachusetts Institute of Technology, Henry S. Munroe of Columbia, and H. L. Smyth of Harvard, Professor Munroe was appointed Academic Director, and the following general scheme was adopted: —

A mine, as well equipped as could be found, was to be leased and made use of for a period of two months for teaching purposes exclusively. A force of practical miners was to be employed to teach drilling, blasting, timbering, track-laying, etc. Each institution was to send instructors, one for every eight students, under whose direction and supervision the work was to be carried out. It was expected also that lectures by engineers in active practice on the sampling and valuation of mines, and other subjects of interest, would be given from time to time. Surveys, both surface and underground, were to be made, and also critical studies of the plant and its arrangement.

Summer Schools of Mining are not a new thing, for the institutions associated in the Crocker School have carried them on for several years. The novelty in this experiment was that instead of being dependent on the courtesy of mine owners and managers for facilities for work and study underground, the granting of which has become a heavy burden with the increase in the size of the classes, the students were to have a mine to themselves, run for no other purpose than to provide them with facilities for study.

In accordance with this plan, the Dives-Pelican Mine at Silver Plume, Colorado, was leased, and the School started early in June. Columbia sent forty students and five instructors; the Massachusetts Institute of Technology, twenty students and three instructors; Yale, eight students and two instructors; and Harvard, twelve students and two instructors, the latter being Messrs. C. H. White and H. C. Boynton.

The work of the School was well planned and administered, and the results accomplished were highly satisfactory. All the institutions enjoyed advantages that were not possible before the establishment of the Crocker School, particularly in the new aids to instruction, namely, the exclusive use of a well-equipped mine, expert demonstrators, and a larger ratio of instructors to students. In the Crocker School there were about seven and a half students to an instructor, while in former years the ratio had been, in our own course, as high as twelve or fourteen students to an instructor.

All the schools reaped certain incidental benefits from this coöperative scheme. Among these benefits were a more intimate acquaintance among the instructors, and a better knowledge of the methods of instruction in use in the other schools; and consequently the opportunity for each to detect the weak as well as the strong points of his own. This better acquaintance undoubtedly will lead to improvement in instruction in all the schools. Students and instructors had every incentive to do their best from the spirit of friendly rivalry existing.

During the past year Dr. E. D. Peters, the eminent metallurgist, gave a course of twenty-five lectures, under this Department, on the metallurgy of copper. It is pleasant to state that this temporary connection has led to a permanent one, and that Dr. Peters will hereafter be with us as Professor of Metallurgy. Besides taking the old Metallurgy 3, Dr. Peters will conduct two new courses, 15 and 26.

While our graduates so far have found little difficulty in getting a start in their life-work, the members of the Department feel that the facilities for passing from the School to the Mine or Metallurgical Works ought to be better organized, and particularly that a system of apprenticeship ought to be established, by which the graduates of this Department could obtain practical experience, under the best auspices, analogous to that obtained by the young graduates of the Medical School in the hospital. An effort has been made to interest a number of Harvard men, who manage or control large mining and metallurgical enterprises, in this scheme, with such success that the experiment will be tried immediately.

The plan is essentially this: A young graduate recommended by this Department is to be taken as a technical apprentice by the mine or mill or smelter, for a period of a year, and is to be paid a living wage. The apprentice is to do any work that he may be assigned to, his tasks, however, in the course of the year being sufficiently varied to make the year's experience profitable to him.

The advantages to the graduate of beginning his career under good auspices are so manifest that such positions will soon come to be regarded as prizes to be eagerly competed for. For the managers, it seems equally certain that, having an option on the services of selected and highly trained young men will make the arrangement profitable to them. They will have besides the satisfaction that nearly all older men feel in helping deserving young men to make a start.

Most of the senior members of the Department, besides teaching in Cambridge, are engaged in professional work, either actively or in a consulting capacity. This close connection with practice has been favored by the University authorities, and has had excellent results.

The present members of the Department, during the past academic year, have published the following papers: —

By J. M. Bell: —

The Economic Mineral Resources of the Moose River Basin. *Annual Report of the Ontario Bureau of Mines*, 1904.

By H. C. Boynton: —

Troostite. *Journal of the Iron and Steel Institute*, London, 1904.

Sorbitic Steel. *Iron and Steel Magazine*, May, 1904.

By E. D. Peters: —

A Review of Pyritic Smelting. A series of ten papers. *Engineering and Mining Journal*, New York, June 2–August 11, 1904.

By A. Sauveur: —

The Iron and Steel Magazine (a monthly publication), Vols. VII and VIII (1904), Edited.

The Classification of Iron and Steel. *Proc. Am. Soc. for Testing Materials*, Vol. IV, 1904.

With Jasper Whiting: The Detection of the Finishing Temperatures of Steel Rails by the Thermo-Magnetic Selecter. *Proc. Am. Soc. for Testing Materials*, Vol. III, 1903.

With Jasper Whiting: The Casting of Pipeless Ingots by the Sauveur Overflow Method. *Proc. Am. Soc. for Testing Materials*, Vol. III, 1903.

With H. C. Boynton: Note on the Influence of the Rate of Cooling on the Structure of Steel. *Am. Inst. of Mining Engineers*, Vol. XXXIV, 1904.

A Correspondence Course in Metallography. Published by the Author.

By H. L. Smyth: —

The Sulphide Deposits of Orange County, Vermont. With P. S. Smith. *Engineering and Mining Journal*, April 23, 1904.

By C. H. White: —

The Appalachian River *versus* A Tertiary Trans-Appalachian River in Eastern Tennessee. *Journal of Geology*, Vol. XII, No. 1, February, 1904.

The Equipment of a Laboratory for Metallurgical Chemistry in a Technical School. *Trans. Am. Inst. Mining Engineers*, Atlantic City Meeting, February, 1904.

H. L. SMYTH, *Chairman.*

MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY.

To the President of the University: —

Sir, — The year has been a successful one in the number and quality of the students receiving instruction in mineralogy and petrography. Among additions to the teaching equipment may be mentioned the installation of Nernst electric lamps with shades and blue glass shields at each window of the petrographical laboratory, enabling students to work with the microscope late in the afternoon hours when the daylight would be of insufficient strength. The mineral and rock material which is placed in the hands of our students has always been of good quality, but we have recently assured a supply for many years to come of an even better grade, by the purchase, at a very low price, of the entire stock of minerals and rocks from a dealer who retires from business.

In last year's report the reasons why it would be desirable to use artificial light in the mineralogical exhibition rooms were given at some length. Through the interest of a friend of the Museum we are now enabled to install the necessary lighting equipment. After consideration of different methods, and experiments with lights temporarily installed, the following plan has been decided upon: Nernst electric lamps will be used, owing to their powerful, steady, and nearly white light. Within each of the eight wall cases on both floors nine single-glower lamps will be placed, while the remaining flat cases will be lighted from the ceiling by three-glower and six-glower lamps with suitable shades. The equipment will include seventy-five single-glower, thirty-six three-glower, and four six-glower lamps, equivalent in candle power to about six hundred ordinary incandescent lamps, but requiring only a little over half the current. The installation will be such that a smaller or larger number of these units may be used independently according to the need for light. The whole system will be controlled by a main switch on the wall of the room, which will be thrown open except at such times as the lights are in use, thus excluding any fire-risk when the rooms are closed.

The Museum has received the usual number of gifts of minerals during the year; among them a number of fine minerals from Mr.

Clarence S. Bement, and students' material from Messrs. Bard and Wilson, former students in the laboratory; also from an anonymous friend the whole of a new iron meteorite from Cumpas, Mexico, weighing 63 pounds; and from the Pennsylvania Salt Co. an exhibit in glass jars of the mineral cryolite and its manufactured products.

The following papers have been published: —

A crystallographic study of Millerite. By CHARLES PALACHE and H. O. WOOD. *Amer. Journ. Sci.*, Vol. XVIII, 1904.

Geological and Mineralogical Notes. By CHARLES PALACHE. *Harriman Alaskan Expedition*, Vol. IV.

JOHN E. WOLFF, *Curator.*

THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

To the President of the University: —

Sir, — For three years, 1884–87, the late Senator Hoar took an active interest in the Museum as one of its trustees, holding this office as President of the American Antiquarian Society. Since then until his death, so universally mourned, he showed in many ways his appreciation of the work of the Museum, and was always ready to aid with his advice and influence. An enthusiastic student of American history, his breadth of view made him realize the importance of preserving and recording whatever would lead to a knowledge of prehistoric America, and it was to this end that he was always ready to secure consideration of our plans and wishes from the several departments of the national government. We should also remember that it was mainly through his influence, at the suggestion of the late Mrs. Mary Hemenway, in 1889, that the unique ruin in Arizona known as "Casa Grande" was saved from destruction and placed under government protection.

During the past year the Museum has issued — through the Committee of the Central American Research Fund — No. 1 of Vol. III of the Memoirs. This number is entitled "Archaeological Researches in Yucatan," by E. H. Thompson. It contains reports on the exploration of the prehistoric ruins of Xul, Tzulá and Chacmultun. These reports are illustrated by nine large plates, including three in color which represent the interesting paintings on the interior walls of the ruined edifice of Chacmultun.

The proceeds from the sales of the Museum publications — other than those issued by the Central American Research Fund — and from the sales of the remainder of the edition of the four volumes of the Journal of American Archaeology and Ethnology, received from the estate of Mrs. Mary Hemenway, have provided the means for the continuation of the octavo series to a limited extent. We have thus been able to issue No. 1 of Vol. III of the Papers, "The Cahokia and Surrounding Mound Groups," by D. I. Bushnell, Jr. This paper gives an accurate description of the largest earth mound in the United States, with maps, text illustrations, and five plates. The publication of this paper again calls attention to the importance of saving from destruction this great prehistoric monument.

For the publication of No. 2 of Vol. III of the Papers, "Exploration of Mounds in Coahoma County, Mississippi," we are indebted to Dr. Charles Peabody, who, assisted by Dr. W. C. Farabee, explored these mounds for two seasons. Dr. Peabody gave all the results of these expeditions to the Museum, where they help to fill a gap in our southern archaeological exhibit. He also assumed the entire cost of the publication of his report. The accurate record of the exploration and of the location of each object discovered, with a record of the human skeletons and their position in the mounds, as well as of the structure of the mounds, makes this paper one of special interest to the field archaeologist, while it gives important information to the student. Dr. Farabee has added to the paper an account of the human bones found during the exploration. In an Appendix Dr. Peabody has given a brief account, illustrated by two heliotype plates, of the "Copiah Wall," relating to which there has been much controversy of late years. The photographs and observations by Dr. Peabody show this "wall" to be a geological formation.

Miss Alice C. Fletcher, holder of the Thaw Fellowship, has continued her researches on the Omaha Indians and her work on the memoir which she is preparing. From time to time she has added to the Omaha collection in the Museum, and she hopes to make it still more complete, so that in connection with her memoir it will set forth the life and history of that one tribe. In all her work among the Omaha Indians she has had the invaluable aid of Mr. Francis La Flesche, a member of the tribe, who has also added important specimens to our Omaha Collection.

Mrs. Zelia Nuttall, Honorary Assistant in Mexican Archaeology, has for the past two years been engaged in Mexican researches for the University of California. At the meeting of the Congress of Americanists she read a paper on "A Penitential Rite of the Ancient Mexicans," which will soon be issued in our octavo series as No. 7 of Vol. I, completing that volume. Miss Mead has prepared an analytical index to the volume, which will be issued with this number.

Dr. A. M. Tozzer, who for several years has been connected with the Museum as a student in the Division of Anthropology, and who holds the American Fellowship in the Archaeological Institute of America, was given the degree of Ph.D. at the last Commencement. Dr. Tozzer is the seventh student in this department of the Graduate School who has received the doctor's degree. His thesis was based on his researches on the language and customs of the Mayas and

Lacandones. At the meeting of the Faculty of the Museum in December, 1903, he was elected Assistant in Central American Archaeology in the Museum. He was in Central America last winter, continuing his researches, and will return there for the season of 1904–05.

Dr. R. B. Dixon was in California during the summer vacation carrying on his researches on the language and myths of the Maidu Indians, in conclusion of his work of several seasons for the American Museum of Natural History. These researches are of importance to him in his courses in this Division.

Dr. W. C. Farabee, during the summer vacation, took charge of a party of fifteen students on a general archaeological and ethnological excursion through the southwest, visiting many of the ruins in New Mexico and Arizona, and the homes of the Navajo, Zuñi and Moki. Extending the trip to the Pacific, the party returned by different routes from California. On the return trip, Dr. Farabee visited several Indian tribes, and secured for the Museum a number of interesting specimens as well as important information for use in his course on General Anthropology.

The archaeological research in Central America has been continued by the aid of generous friends who are specially interested in the archaeological problems of that region. The work is under the direction of a special Committee of the Faculty of the Museum, and the results are published in the Memoirs of the Museum.

In January, 1904, the Corporation granted to the Peabody Professor a leave of absence for three months. This time was spent in performing his duties at the University of California as head of the Department of Anthropology in that University. During the summer vacation he was again in California looking after the installation of the Department in its temporary quarters at the Affiliated Colleges in San Francisco. During these trips to California, exchanges of a number of duplicate specimens were made, to mutual advantage, between this Museum and the Anthropological Museum of the University of California.

The year's income of the Henry C. Warren Fund was in part used for archaeological exploration in the Connecticut Valley by Mr. A. L. Dakin. During the last few weeks of the season, Mr. Dakin made an exploration of an Indian burial place in Ipswich. As is often the case, these burial sites did not yield much of importance, and the hope of obtaining skeletons was destroyed by the almost entire disintegration of the bones. The remainder of the income of this fund was employed in the exploration of an ancient

Iroquoian site in New York State. This work was under the immediate charge of Mr. M. Raymond Harrington, who was so successful last year in the exploration of an Erie site, the collection from which place is now on exhibition. Mr. Harrington was equally successful in this season's exploration and secured a number of skeletons and many specimens illustrating Indian arts and customs. Another important collection will thus be added to the exhibits of the archaeology of the eastern portion of the country, and the value to the Museum of this fund is again demonstrated.

With the income of the Huntington-Frothingham-Wolcott Fund we have been able to secure a considerable number of important specimens and small collections which were much needed to fill gaps in both the ethnological and archaeological exhibits in the Museum. The largest collection obtained consists of a series of rare and choice articles, collected many years ago in Australia, Melanesia and Polynesia, which have increased the importance of the exhibits from those regions. Many other rare specimens, which can be obtained only by chance, were secured by having the cash on hand. This fund is our only available and ready resource for such purposes, and many important specimens for the study of comparative archaeology and ethnology are thus added each year to the Museum.

By the vote of the Museum Faculty the income of the Susan D. Warren Fund has been applied to defray the cost of the new cases in the Indian gallery.

The library of the Museum has been increased during the year by the addition of 133 volumes and 104 pamphlets, and now contains 3,138 volumes and 2,908 pamphlets pertaining to anthropology. There have been transferred, during the year, to the general library of the University, 11 volumes and 9 pamphlets.

A new exchange of importance has been added during the year, namely, the publications of the Department of Anthropology of the University of California. These include papers on the ethnology and archaeology of California; the volume on the Tebtunis Papyri; and the reproduction of the post-Columbian Mexican manuscript, entitled "The Book of the Life of the Ancient Mexicans," reproduced in facsimile, with introduction, translation, and commentary by Zelia Nuttall. Part I.

Among the gifts to the Library are volumes of special importance to the work in the Museum and to instructors and students in the Division of Anthropology. A constant friend has sent a number of these volumes, completing series of publications to date. To the Duke of Loubat we are again indebted for copies of his recent publications, including the Codex Magliabecchiano XIII. 3., a reproduction of a post-Columbian Mexican manuscript. In this connection should also be mentioned a large number of the folio plates from Biologia Americana— Archaeology—by A. P. Maudslay, which Mr. Maudslay most kindly sent to the Museum for use in studying the glyphs and for labels in connection with specimens from Central America.

In addition to the numerous specimens obtained from the several Museum explorations and by purchase by means of the Huntington-Frothingham-Wolcott Fund, we are indebted to friends for many valuable specimens. First to be mentioned is Mr. Lewis H. Farlow, of Boston, who has continued to remember the Museum, and is always on the watch for specimens that will fill some gap in our ethnological exhibits. Since the date of the last report he has given to the Museum: Baskets, garments, and household utensils from the Eskimo of Alaska; rare baskets, ceremonial masks, garments, dance rattles and copper daggers from the northwest coast tribes; an unusually fine shaman's hat from the Tlingits of Alaska; basketry and other objects from California, Washington and British Columbia; two rare dance skirts from the Klamath River region; basket-trays, carrying-baskets and beaded objects from the Utes and other inland tribes; a feather ornamented skirt of woven Hibiscus leaf from Samoa; four baskets from Borneo, and two dance masks of the Clallam Indians of Washington.

Another gift of special importance is from the University of Pennsylvania and consists of a fine representative collection of the arts and customs of several tribes of the Island of Borneo, with a large series of photographs showing the native peoples and their habitations, illustrating the home life of several tribes. This collection is of special value as we had only a few isolated objects from the island. The collection is from the remarkably complete series in the Museum of the University of Pennsylvania, and was made by Doctors W. H. Furness, 3d, H. H. Hiller, A. C. Harrison and Charles Hose. The instructive volume on Borneo by Dr. Furness is based on these expeditions.

Other friends have made the following gifts: —

Mr. George Shattuck of Boston, a pair of Eskimo boots from Alaska; Mr. J. Henry Blake of Cambridge, shell necklace, Indians of Acapulco, Mexico; Mrs. F. W. Putnam of Cambridge, two baskets from Colombia, S.A., and a yucca basket from Pueblo San Filipe, New Mexico; Dr. L. C. Jones of Malden, two old carrying-baskets and four other splint baskets, made by Mashpee Indians, Barnstable County, Mass.; Mr. D. I. Bushnell, Jr., stone and shell objects from vicinity of Cahokia Mound, Ill., and a hematite grooved axe from Montgomery County, Mo.; Mr. H. W. Seton-Karr of Wimbledon, England, nine palæoliths from India, and 116 chipped implements from the Fayoom District, Africa; Miss F. H. Mead of Cambridge, basket from Korea; Mr. C. W. Mead of New York, chipped stone implement from Hough's Neck, Mass.; Miss E. R. Fisher of Cambridge, a gourd dish and a needle case from Sierra Leone, Africa; Mr. David Wagstaff (Harvard 1905), chipped arrow points and knives from village site near Pomfret, Conn.; Miss Adela C. Breton of Bath, England, water-color drawings and colored photographs of wall paintings, Temple of the Tigers, Chichen Itza, Yucatan; Mr. Robert J. Hoguet of New York, 137 photographs of buildings (ancient and modern) in Greece, Egypt and Turkey; Professor F. W. Putnam, photographs taken by Dr. Harris Kennedy showing the Indian soapstone quarry on Santa Catalina Island, Cal.; Mr. T. Maler of Tenosique, Mexico, fragments of engraved bowl and large jadeite head from ruins of Yaxchilan, Chiapas, Mexico; also fragments of human skeletons and potsherds from cave at Actun-tsits, Yucatan; Miss Emily Clark, Derby, Conn., splint basket made by Molly Hatchet of the Pautucket tribe of Indians, early in the 19th century; Mr. C. P. Bowditch of Boston, terra cotta heads, shell and jadeite heads and jadeite carvings, and a shell nose ornament from Nochestlan, Oaxaca, Mexico; also an Attu and a Tlingit basket, Alaska; Archaeological Institute of America, incense burners, calabash cups, effigies of quadrupeds, collected by Dr. A. M. Tozzer from the Lacandone Indians, Chiapas, Mexico; Mr. Quentin Bulneo, San Antonio, Mexico, terra cotta vessel in form of monkey, from a mound near San Antonio; Mr. Eladio Pabon Vargas of Parguera, Lajas, Porto Rico (a Porto Rican teacher), nine stone celts, a stone head and portions of pottery vessels from island of Cueva Ayala, near Porto Rico; Mr. Arthur W. Crosby, stone hammer from junction of Columbia Road and Bird Street, Dorchester, Mass.; Mrs. R. F. Brown of Cambridge (through Miss Mead), a Micmac Indian birch-bark box ornamented with porcupine quill work and split spruce roots, over one hundred years old; Dr. W. C. Farabee, stone axe from Maine, pestle from British Columbia, fragment of cloth of buffalo hair from cliff house, Cañon de Chelley; and through him (by purchase), several pipes and implements of the Blackfeet Indians.

Mr. Willoughby has catalogued these many additions to the Museum during the year and has prepared them for exhibition. So far as space could be found in the crowded condition of our cases he has placed them on exhibition. Sometimes it has been necessary to take from the cases objects that should be exhibited, in order to put in those which must be placed under glass for preservation. Notwithstanding these shiftings and rearrangements, a large portion of many instructive collections has had to join others in storage, awaiting the day when the Museum Building shall be completed,— a matter that is becoming more pressing every year. The building if completed would add as much space as we now have, and an arrangement of the collections could be made which would not only greatly increase the importance of the Museum for educational purposes but would also show the many treasures which have accumulated during the thirty-eight years of its existence.

Many labels and location maps have been added to the cases by Mr. Willoughby during the year, and he has placed general labels on the cases. This important work of labelling has been going on gradually for several years, but it is a laborious and time-taking process. It is also an expensive one, owing to the cost of printing the labels. Mr. Willoughby has also added a number of the ethnological photographic groups on the wall spaces of the ethnological galleries.

For the year 1904–05 the Division of Anthropology offers a course in General Anthropology, another on American Archaeology and Ethnology, and four half-courses as follows: Somatology; Prehistoric Archaeology. — European Ethnography; Ethnology of Oceania; and American Indian Languages; by Doctors Dixon and Farabee. Also three Research courses, — American Archaeology and Ethnology, Professor Putnam; Advanced Somatology, Dr. Farabee; American Indian Languages, Dr. Dixon. Over two hundred students are attending these courses, and 28 Radcliffe students are taking two of the courses. By the timely aid of a few friends the Division was saved from the threatened reduction in instruction, which, from lack of funds, the Corporation was forced to make in all divisions of the Faculty of Arts and Sciences for the year 1904–05.

In addition to the gifts of specimens and books, we have for several years received annual gifts of money from a few friends who are aware of the limited resources of the Museum and know of our needs. Their contributions are generally applied to some specific purpose of which mention is made from time to time. From these gifts much of importance is secured to the Museum, either by exploration, by special research, by publication, or by payment, in part, of salaries. The progress of the Museum depends so largely on aid from its friends that we cannot be too grateful for all such gifts.

F. W. PUTNAM,

Peabody Professor and Curator of the Museum.

THE SEMITIC MUSEUM.

To the President of the University:—

Sir,—The additions to the Museum during the past year embrace several small collections of cuneiform tablets, some of which are large and fine specimens from the early Babylonian period. There are also several specimens of stone vases from the same period. From later times is a well preserved inscription of Nebuchadrezzar, of the sixth century B.C., on a barrel-shaped clay tablet, and from Asia Minor several fragments of the tablets commonly known as Cappadocian.

From Palestine has come a collection of fifteen pieces of antique jewelry in gold.

To Dr. William M. Woodworth we are indebted for the gift of 84 copper coins from the Maldive Islands, bearing legends in the Arabic character.

Dr. John Orne has continued his work of studying and describing the Arabic Manuscripts belonging to the Museum.

It is a pleasure to record that the lecture-rooms are this year being used by various other instructors besides those in Semitic. They have also been used for the past three years by the Summer School of Theology, and are admirably suited for that purpose.

On the night following January 12th, 1904, the Museum was broken into, one of the cases pried open, and two of the Arabic manuscripts stolen. Some two weeks later one of these was sent to the Boston *Globe*, with a note signed "Med. Fac." The other manuscript has not yet been returned.

In the last report was mentioned the purchase and arrival of several large models made by Dr. Conrad Schick of Jerusalem. Suitable cases have been prepared and these models are now on exhibition in the Palestinian room and in the hall of the top floor. They are carved in wood, and represent much patient and skilful work. One is of the Tabernacle, one of the Temple of Solomon, and one of the Temple site as it is to-day. The last named, based on measurements and observations, is of great interest and value. From the nature of the case, many of the details in the other models have to be regarded rather as suggestions than as certainties.

The Tabernacle is made after the description given in Exodus 25–27, 36–38, and the visitor who reads these chapters with the model before him will have a much better idea of the Tabernacle than he is ever likely to picture for himself. The Tabernacle proper is covered by a tent. In the Holy Place is the table of showbread, the altar of incense, and the candlestick of seven branches; and in the Holy of Holies the ark, covered by the mercy seat and the cherubim. In the outer court are the laver and the altar of burnt offerings, and the various phases of sacrifice and of worship are also represented.

The model of the Temple of Solomon represents not only the Temple proper, but also the various courts and colonnades which surrounded and protected it, the tower to the north and the palace of Solomon to the south of the Temple platform. Most of these parts may be removed and replaced by others, and then we have the Temple of Herod, as conceived by Dr. Schick. Other parts may be substituted which represent the Temple of Zerubbabel, the Temple of Jupiter erected by Hadrian, and the church built on the site by Justinian.

The third model represents the Temple site as it is to-day, an enclosure almost rectangular, something over a mile in circuit. The boards representing the surface of the enclosure are in sections, and by removing these one can see the levels of the rock and the many cisterns cut into the rock. The enclosure is now almost level, and is bounded by arcades on the north and the west, and by walls on the south and the east. Against the southern wall is the mosque El-Aksa. Near the middle of the enclosure, on a large platform, stands the mosque known as the Dome of the Rock. Just beneath the dome is the great rock on which it is believed that the altar of burnt offerings belonging to Solomon's Temple stood.

Explorations and excavations are now carried on with great zeal in many parts of the Semitic field. The value of such undertakings has been pointed out in several previous reports, and it is highly desirable that the University and the Museum should have part in this work. For a campaign of five years we should have a sum of not less than $50,000. I am glad to say that we have the offer of half this sum, provided the other half can be secured.

In May, 1904, the Museum received an oil portrait of Jacob H. Schiff, Esq., painted by Mr. Louis Loeb in the winter of 1903–04. The painting is the gift of Mr. Schiff's colleagues on the Committee to visit the Semitic Department, Messrs. Isidor Straus, Stephen Salisbury, and George Wigglesworth. The Museum is to be congratulated on having a good portrait of its founder and chief benefactor. With characteristic modesty Mr. Schiff declined to sit for this portrait except on condition that it should not be exhibited during his lifetime.

DAVID G. LYON, *Curator.*

THE FOGG ART MUSEUM.

To the President of the University: —

Sir, — I have the honor to present the following report on the Fogg Art Museum for the year 1903–04.

Our accessions of original works are as follows: Two Italian tempera pictures on panels, a Madonna and Child by the early Venetian master Bartolommeo Vivarini, who flourished during the second half of the fifteenth century, and a Madonna and Child with the Infant St. John, by a follower of the Florentine Master Giuochi, called Pesellino (1367–1446), both deposited as an indefinite loan by our first and most constant benefactor, Mr. Edward W. Forbes, '95; and the following examples of the art of the early English school of water-color painters: Prestwich Church, by Thomas Hearne; Lac de Joux, by J. R. Cozens; Shaugh Bridge, Devon, by William Payne; and Junction of Wye and Severn, by Edward Dayes, all purchased out of the appropriation for Fine Arts.

The Italian panels are both important additions to our series of original works by early Italian painters. The Vivarini has suffered little from repainting. The principal parts appear wholly untouched by the hand of the restorer, and are otherwise uninjured; but the draperies have in some places suffered from abrasion. In this primitive Venetian work the distinctly drawn outline appears, as in Central Italian painting, though there is a degree of solid modelling that is peculiar to the art of Venice. Some survival of Byzantine mannerism is noticeable in the draperies, but nothing of this appears in the heads and hands. In the Pesellino School picture the figures are painted on a gold ground, and the whole panel is in good condition, and is very beautiful in color. It is thoroughly Florentine in spirit, and subtle in expression. These pictures have been hung on a screen in the large gallery, where they are well lighted. The water-color drawings are valuable additions to our small collection of original examples illustrating the early development of the modern English school of landscape painting which culminates in the works of Turner, of whose art we now have six original examples, some of which are among his most characteristic and finished works.

To the Gray Collection of Engravings we have added, by purchase out of the income of the Gray Fund, the following prints: Two etchings by Rembrandt, the Angel leaving Tobit and his family, first state, and the small Lion Hunt; four plates of Turner's Liber Studiorum in the etched state; Blair Athol, Woman at a Tank, Watercress Gatherers, and Stork and Aqueduct. To this collection has also been added a portrait of himself engraved on wood by Gustav Kruell, a gift from Professor C. E. Norton. Prints are sometimes given to the Museum (not to the Gray or Randall collections) and are accessioned separately as belonging to the Museum Collection. For this collection we have received, as a gift from Mr. Francis Bullard, '86, of Boston, the so-called Richmondshire series of 20 plates, after drawings by J. M. W. Turner, engraved in line by J. Pye, T. Higham, W. Radcliffe, J. C. Varrall, H. Le Keux, S. Rawle, S. Middiman, J. Scott, W. R. Smith, C. Heath, J. Le Keux, J. Archer, J. Landseer; and two etchings, Moss Dale Fall, by S. Middiman, and Kirby Lonsdale Churchyard, by C. Heath. We have also added to this collection a portrait of Rousseau, engraved on wood by Gustav Kruell after Ramsay, a gift from Wendell P. Garrison, Esq., '61; a portrait of the late James Bradley Thayer (three impressions in different states), etched by Sidney L. Smith, a gift from the Thayer Club Association; a print of S. A. Schoff's line engraving after The Bathers by the late William Hunt of Boston, and The Reliance, by an unknown engraver, both given by John A. Lowell, Esq., of Boston; and a portrait of Lavinia Bingham, engraved by O. W. Barbolin after Sir Joshua Reynolds, a gift from Harvard College Library.

To the Collection of the Department of Fine Arts, permanently deposited in this Museum, we have added two plates of Turner's Liber Studiorum in the etched state, — Hind Head Hill, and Twickenham. Of these new prints those of Rembrandt and Turner are the most important, and they are all of great value. The Stork and Aqueduct is one of the unpublished plates of the Liber series; it is very rare and very beautiful.

To the collection of photographs, 5,981 additions have been made, including the following groups of subjects: Mediaeval German Architecture, Mediaeval, Renaissance, and Modern Italian Architecture and Sculpture, Ancient painting and Renaissance painting, chiefly Italian. Of these, ten photographs were given by Miss Sarah Norton. The whole number of photographs now in our collection is 36,930, and of these 31,475 are catalogued and arranged in the cases.

To the collection of slides, 82 additions were made, of which one was given by Professor John H. Wright, one by Professor E. Emerton, 13 by Professor A. L. Lowell, and 7 by the Rev. George Hodges.

The following books, purchased with the income of the Searle Fund, have been added to the Museum library: Crowe and Cavalcaselle, Life of Titian, 2 vols.; Baedeker's Handbook for Palestine and Syria, and Handbook for Great Britain, 1 vol. each; Cyril Davenport, Mezzotints, 1 vol.; Bryan's Dictionary of Painters and Engravers, new edition, 3 vols.; Andresen, Deutschen Maler-Radirer, 5 vols.; Andresen-Weigel, Deutsche Peintre-Graveur, 5 vols.; Ris-Paquot, Dictionnaire Encyclopédique des Marques & Monogrammes, 2 vols.; Van der Kellen, Peintre-Graveur Hollandais et Flamand, 1 vol.; A. Whitman, Samuel William Reynolds, 1 vol.; John Evelyn, Sculptura, 1 vol. The Museum library has also received as a gift from Mr. W. C. Lane, '81, the Bowdoin Collection of Plates, and from the Trustees of the Boston Museum of Fine Arts, A Manual of Italian Renaissance Sculpture.

To the library of the Randall Collection, by purchase from the income of the Randall Fund, have been added: Index of Artists represented in the Department of Prints and Drawings in the British Museum, vols. 1 and 2; Henri Delaborde, La Gravure en Italie avant Marc-Antoine; Georges Duplessis, Histoire de la Gravure en Italie, en Espagne, en Allemagne, dans les Pays-Bas, en Angleterre, et en France; and Alfred Whitman, The Masters of Mezzotint.

Work on the subject lists of photographs has been carried forward, and 917 photographs and 62 slides have been catalogued. In the Print Department 7 prints (new accessions) of the Gray Collection, and 1,307 prints of the Randall Collection, have been catalogued. The total number of Randall prints now catalogued is 8,178. Labels have been affixed to 268 prints, and 46 prints and 2,688 photographs have been mounted.

Photographs and prints have been mounted, and other mechanical work has been done in our work-room, for the Semitic Museum, the Publication Office, and for a few outsiders. For this work the Museum has received the sum of $47.09. From the sale of photographs after original works in the Museum we have received $12.40, and from the sale of catalogues we have received $4.20. Our total receipts were thus $63.69.

During the year an exhibition of etchings by the late J. McNeil Whistler was made in the Print-room.

Persons seeking access to photographs in the cases made 1,495 visits, and of these 987 visits were by members of the University. The number of visits to the Print Department, for the study of prints not exposed in the wall cases, was 437, of which 389 were by members of the University.

Photographs were lent 208 times, to the Department of Architecture, to members of the University, and to schools and publishers in Boston and elsewhere. Slides were lent 114 times, to the Department of Architecture, to Radcliffe College, and to schools.

It has been our policy thus far to make the Museum collections as widely useful as possible to the community at large; and, in accordance with this policy, we have lent slides and photographs a good deal to outsiders, as well as to members of the University. But it has been found of late that requests for the use of slides have so increased as to materially embarrass our own work of teaching. The Museum Committee have therefore voted that it is inexpedient to continue the lending of slides to outsiders save in exceptional cases at the discretion of the Director. Our collection of photographs is so much larger than our collection of slides that we hope to be able to continue lending them unless the demand becomes so considerable as to interfere with our own work.

With our very insufficient endowment, and in the present straitened condition of the Corporation's resources, we have been unable this year to provide the additional cases that are needed for the storage of our new accessions of photographs. We are therefore obliged, as these new photographs are mounted and catalogued, to pile them up where they must remain inaccessible until new cases can be obtained.

Our most pressing needs now are: (1) For a properly-lighted addition to our building, for the display of our important original works of art, of which I spoke in my last report, stating that plans for two wings have been prepared, that the estimated cost of erecting these wings is $50,000 and $40,000 respectively. Our valuable and growing collection of early Italian paintings cannot be seen to advantage until at least one of these wings is built. (2) For additional endowment for the larger expenses of administration and for the purchase of desirable works of art. At present so large a part of the incomes from the Gray and Randall Funds has to be devoted to expenses of administration that the balance available for the purchase of prints is almost insignificant. Opportunities to acquire rare and important prints occur from time to time, but we are unable, for the most part, to take advantage of such opportunities. We ought, also, to have some means of purchasing original works in Sculpture and Painting in order to develop our working museum to its fullest usefulness. (3) For more adequate provision for small incidental expenses.

CHARLES H. MOORE, *Director.*

THE GERMANIC MUSEUM.

To the President of the University: —

Sir, — The academic year 1903–04 began for the Germanic Museum with an event which marks the completion of the first, preparatory stage in its history — the formal opening of the present collection and the dedication of the gifts presented by the German Emperor. The exercises were held on November 10, the anniversary of Schiller's birth, and consisted of two separate parts. In the afternoon addresses were delivered in the New Lecture Hall by Baron von dem Bussche-Haddenhausen, the special representative of the Emperor, President Eliot, Hon. Carl Schurz, Mr. Edward Robinson, and Professors von Jagemann, James, and Francke. In the evening the Irving Place Theatre Company of New York, by the courtesy of its director, Mr. Heinrich Conried, presented in Sanders Theatre three short plays, illustrating various phases of the German drama from the sixteenth century to the present: Hans Sachs's "Der fahrende Schüler im Paradies"; Goethe's "Die Geschwister"; Fulda's "Unter Vier Augen."

Since the Emperor's donation is now a matter of public record, it seems fitting to mention here briefly some of the agencies through which it came about. The first semi-official connection between the Museum and the German Government was established at a reception given in March, 1899, by Professor Münsterberg to the then German Ambassador at Washington, Dr. von Holleben, in the course of which the Ambassador, in reply to speeches made by various members of the German Department and the Board of Visitors to the same, expressed the keen sympathy entertained by his Government for the Museum undertaking. Early in 1900, the Curator, at that time Chairman of the Department of Germanic Languages and Literatures, engaged in a correspondence with Professor Herman Grimm, of Berlin University, suggesting that efforts be made by him to induce the Prussian Government to give to the Germanic Museum certain selected plaster-casts of mediaeval German sculptures contained in Prussian museums. Professor Grimm, generously embracing this idea, succeeded in interesting Count von Bülow, the Imperial Chancellor, in the project. As a consequence, the Curator received at the beginning of 1901, through the German

Embassy at Washington, an invitation from the German Government to make formal application for such a gift and to specify the objects which would be most welcome. With this request he complied, adding that if there were a possibility of interesting the Emperor himself so as to have whatever gift might be made take the form of a donation from him, the value of such an expression of international friendliness would thereby be greatly increased. He did not divine then that the Emperor, of his own volition, in the selection of objects to be presented would go far beyond what at that time it seemed reasonable to hope.

Apart from the dedication of the Emperor's gifts, the formal opening of the Museum was made memorable through the presentation of two important documents: an address from a committee at Berlin of leading German scholars and public men — among them such names as Theodor Mommsen, Adolf Harnack, Friedrich Paulsen, Althoff, Richard Schöne, Julius Lessing, Arthur Gwinner —announcing a gift of fifty-five electrotype reproductions of German metal work from the twelfth to the eighteenth century; and a letter from Professor A. C. Coolidge, announcing his intention to give, in memory of the visit of Prince Henry of Prussia to Harvard University, a collection of ten thousand books dealing with German history, to be called the Hohenzollern Collection.

Since Professor Coolidge's gift is to belong, by the intention of the donor, not to the Germanic Museum, but to the University Library, this report is not the place to dwell on its significance. It is clear, however, that every increase in the resources of the Library for the study of German history is a direct gain for the Germanic Museum also; for the aim of the Museum is essentially historical, and its ultimate purpose of presenting a complete, though succinct, conspectus of the development of the Germanic race cannot be fulfilled without the aid of books. It is gratifying that through the announcement of this gift in connection with the formal opening of the Museum the unity of all historical studies — to whatever field of national activity they may belong — received public recognition.

The gift of the Berlin Committee, which represents a money value of over fifty thousand marks, arrived in December and was on exhibition in the Museum during the winter months. In April, at the request of the Imperial German Commissioner at the Louisiana Purchase Exposition, it was sent to St. Louis, to form, for the remainder of the year, part of the German industrial exhibit at the World's Fair. This collection, made possible by individual contributions throughout Germany, and representing German handicraft at its best, is a most worthy popular counterpart to the Emperor's donation, and a most welcome addition to the treasures of the Museum.

The oldest pieces of the collection are types of Romanesque communion chalices and patens of the twelfth century and the early part of the thirteenth. These vessels are equally remarkable for the simplicity and dignity of their outline and for the grace and richness of their ornamentation. The forms of the chalices are compact, yet fully articulated; the round knob which divides in them the cup proper from the shaft and foot gives an easy purchase for handling it; the decorations, both arabesques and figures in niello work, serve to accentuate and enrich the general contour, without in the least forcing themselves into the foreground. One gains the impression that the artists of these ecclesiastical vessels could not help pouring out all their religious feeling and thought into their work, and yet knew very well how to restrain themselves in giving form to it.

Secular handicraft of the fifteenth and sixteenth centuries is represented by a large number of Gothic and Renaissance goblets, loving cups, finger bowls and dessert plates, belonging to cities, guilds, princes, or distinguished individuals. The forms of these Gothic and Renaissance vessels, particularly the goblets, are much more ornate and fantastic than those of the earlier work. Compared with the round, concentric lines of the Romanesque chalices we see here a tendency toward elongation and toward manifold curving and branching out. What is hereby lost in unity and simplicity is gained in variety, picturesqueness, and stateliness. Particularly effective in the Gothic specimens are the embossed bulbs, partly round, partly oval, which surround both the body and the cover of the goblets, reflecting the light at different angles and producing a fanciful play of color about them — an effect which is still heightened by the free use of enamel on the flat surfaces.

Of particular historical interest among these vessels are: a goblet given in 1462 by King Corvinus of Hungary to the City Council of Vienna; a loving cup given in 1525 by the University of Wittenberg as a wedding present to Martin Luther; a goblet made for Emperor Maximilian II by the famous Nuremberg silversmith, Wenzel Jamnitzer (1508–1588); and, above all, selected pieces from the magnificent table service of the old Hanse town of Lüneburg. In the year 1600 this table service still consisted of some three hundred pieces. In consequence, however, of the ravages of the Thirty Years' War and the destruction of civic independence in the seventeenth and eighteenth centuries, it dwindled down in course of time to thirty-seven, which are now in the possession of the Museum of Arts and Crafts at Berlin. Every one of the pieces of this Lüneburg treasure was originally a gift made by a citizen to the town, in commemoration of some event of private or public importance. They are, therefore, as a whole, a striking instance of the spirit of civic devotion and pride which made possible the great era of German burgherdom in the fifteenth and sixteenth centuries.

The seventeenth and eighteenth centuries are represented by nearly a dozen specimens of the Baroque and Rococo style. Civic art has now been superseded by princely art. Splendor and elegance have taken the place of solidity and firmness. That, however, even in the courtly art of the eighteenth century there was not a little of boldness of invention and delicacy of execution left is shown, for instance, by the exquisite little Nautilus goblet, the work of a Berlin master of the time of Andreas Schlüter.

For the bringing together of this remarkable exhibit of German metal work from a large number of museums and private collections in Germany, Austria, France, and England, we are indebted to Professor Dr. Julius Lessing, Director of the Royal Museum of Arts and Crafts in Berlin, who in a most unselfish and patriotic spirit took upon himself the arduous task of overseeing and directing this work, and to whom we owe, in addition, a most instructive, carefully illustrated catalogue of the whole collection. May he and the other members of the Berlin Committee feel rewarded by the assurance that they have succeeded in placing before American students a striking and unique illustration of the development of German industrial art through six centuries, and in giving, besides, incontestable evidence of the high state of efficiency reached by the electrotype technique of reproduction in contemporary Germany.

Other gifts of the year are as follows: From Mr. H. W. Putnam, of Boston, eight casts of reliefs from the Marcus Aurelius Column at Rome, representing episodes from the Marcomanni War, such as the destruction of Germanic villages, the deportation of Germanic captives, and similar scenes containing evidence of early Germanic habitation and costume. From Mr. Arthur P. Schmidt, of Boston, a cast of the tomb of Duke Henry the Lion and his wife at Braunschweig, one of the finest sepulchral monuments of the thirteenth century. From the United German Singing Societies, of Boston, a plaster model, by Herr Bodo Ebhardt, of Berlin, of the Hohkönigsburg in Alsace, one of the most important mediaeval castles of Germany, which is now being restored by the German Emperor. From Miss Mary F. Bartlett, of Boston, four engravings after Dürer, the four Apostles and Charlemagne by Albert Reindel, Dürer's own portrait by J. L. Raab. The following money contributions were received: $100 from Mr. Charles B. Rogers, of Utica, N. Y.; $25 from the German Teachers Club, of Boston; $4 from Professor Max F. Blau, of Princeton University; $25 from the German Department of Mount Holyoke College. The present balance at the disposal of the Germanic Museum Association amounts to $475. The Museum was open to the public throughout the year on two week days and — owing to a generous provision made by an anonymous donor — on Sunday afternoons. It was visited during that time by 21,046 persons, a very gratifying sign of widespread public interest.

In looking back upon the last three years — that is, the time since the first purchases for the Museum were made — we have every reason to feel encouraged by what has been accomplished during this period; for an institution has been established which even in its present incipient stage seems bound to exert a strong and lasting influence upon the study of Germanic civilization in American universities. But satisfaction at what has been achieved thus far — however well founded such satisfaction may be — should not blind us to the fact that the main work in building up a Germanic Museum worthy of its name is still to be done.

The present Museum building, obviously a very inadequate shelter for precious gifts made by a friendly government and a kindred people, is even now so crowded with objects that it offers no room for the expansion of the collections. The need of a new building is therefore immediate and imperative. This new building, apart from affording a worthy and safe setting for the monuments already in our possession, must provide opportunity for enlarging the scope of the Museum so as to make it a truly historical survey of the development of Germanic civilization. It must contain, therefore, separate rooms for models of the habitations of the lake-dwellers in Switzerland; for specimens of Germanic burial mounds, weapons, arms, utensils, ornaments from the time of the Roman invasion; for reproductions of Frankish, Anglo-Saxon, Norse antiquities; for models of typical farm-houses of the various Germanic tribes, of mediaeval castles and guild halls; for reproductions of the interiors of German burgher-houses of the Renaissance, and so on.

The emphasis, however, of the Museum will, I take it, always lie where it lies now, in a representation of German monumental and architectural sculpture. A suitable hall of sculpture will therefore be the first and most important requirement of the new building; indeed it would be perfectly proper to make a beginning with such a hall alone. This hall of sculpture should be divided into at least three large rooms of about 36′ × 100′ each, devoted, respectively, to the Romanesque, Gothic, and Renaissance periods. Three such exhibition rooms would give an opportunity of enlarging our present collection of casts in such a way as to make it a reasonably complete view of the best of German monumental art from the Bernward Column down to Rauch's Königin Luise and Klinger's Beethoven. By means of galleries and alcoves it would be possible to include in these rooms typical work of the industrial arts also, such as the beautiful specimens of ancient silver and gold ware described above, while the background of the whole would be formed by a still more comprehensive collection of architectural photographs than we have on the walls of the present building. The ready response and generous help which the propaganda for our undertaking has received in Germany thus far make it seem probable that, if we succeed in providing for the adequate housing of monumental casts, there will be no lack of further aid from German governments, museums, and private individuals in providing the casts themselves. The friends of Harvard University, then, have here an opportunity of coöperating with the German people in leading to its consummation an institution which is of equal importance to the student, the artist, and the lover of the beautiful, and which, when completed, cannot fail to mark an epoch in the cultivation of the humanities in America.

KUNO FRANCKE, *Curator.*

RADCLIFFE COLLEGE.

To the President of the University: —

Sir, — As Dean of Radcliffe College, I have the honor to submit my report for the academic year 1903–04.

The number of students in actual attendance during the year was 458, as against 429 during the preceding year.

Graduate Students	68
Seniors	62
Juniors	72
Sophomores	73
Freshmen	81
Special Students	102
Total	458

At Commencement in June, 1904, ninety-six students, six of whom had completed their residence in an earlier year, received the degree of Bachelor of Arts. Twenty-eight students, who had not been registered as Seniors, received the degree. Of the ninety-six successful candidates, two received the degree *summa cum laude;* fourteen received it *magna cum laude;* thirty-seven *cum laude.*

Twenty-one students received the degree of Master of Arts. Twelve of the twenty-one had taken their first degree at Radcliffe, the others represented the following colleges: Bates College, University of Cincinnati, University of Kansas, McGill University, Mt. Holyoke College, Smith College, Syracuse University, Wesleyan University, College for Women of Western Reserve University.

Examinations for admission were held in June, 1904, in Cambridge, Andover, Atlanta (Ga.), Brookline, Cincinnati (Ohio), Exeter (N. H.), Fall River, Groton, Lynn, Milton, New Bedford, Omaha (Neb.), Philadelphia (Pa.), Pittsburgh (Pa.), Portland (Me.), Quincy, South Byfield, Springfield, St. Paul (Minn.), Washington (Conn.), Worcester, and Youngstown (Ohio). They were also held in September in Cambridge. Two hundred and ninety-five candidates presented themselves for examination, one of whom did not complete her examination. Fifteen were candidates for admission as Special Students; forty-seven candidates took part of the examination or worked off admission conditions; one hundred and twenty-nine took the Preliminary Examinations, and one hundred and two the Final Examinations.

The results of the Final Examinations are given in the following table: —

	Admitted.	Admitted "Clear."	Rejected.
June	83	41	5
September	13		1
Total	96		6
Total rejected	6		
	102		

Ninety-six candidates were admitted as Freshmen in 1904, as against one hundred and sixteen in 1903.

Sixty-eight Graduate Students registered during the year, thirty-nine of whom were from other colleges. Thirty-three students were admitted to sixteen full courses, and seventeen students to seven half-courses of the "Courses primarily for Graduates in Harvard University open to competent Students of Radcliffe College."

The members of the Academic Board for 1903–04 were: Professor Byerly (Chairman), and Professors Minton Warren, E. L. Mark, J. H. Wright, S. M. Macvane, E. H. Hall, H. C. G. von Jagemann, C. H. Grandgent, G. L. Kittredge.

The Caroline I. Wilby Prize, which is given "for the best original work in any department," has been withheld since 1900, as no thesis or original work has been of sufficient importance to deserve it. In June, 1904, two papers were deemed worthy of the distinction, and two prizes were awarded, one to Belva Mary Herron, B. L. 1899 (University of Michigan), a Graduate Student in Radcliffe, for a paper on the Progress of Labor Organization among Women; and one to Caroline Strong, A. B. 1903, a Graduate Student in Radcliffe, for a thesis on the Tail-Rhyme Strophe in English Poetry.

The South End House Fellowship, established by Miss Rogers in 1903 for a period of two years, under the conditions stated in the last Report, has been awarded for the second time to Charlotte Henrietta Price, A. B. (Radcliffe) 1901. Miss Price is investigating a deeply interesting problem in city life in Boston: she proves, if proof were needed, the value of a trained intelligence in dealing with social problems, and the special fitness of a woman for the profession of social worker. Year by year this distinctly modern profession grows more and more attractive to the graduates of women's colleges; and we must rejoice because a new career is open to women, and because the women, who add to their natural endowment of tact and quick sympathy the poise and balance given by long mental training, can do much to solve many of the vexed and vexing questions of the time. One Radcliffe graduate has been for the past year engaged in an interesting experiment in a Company's School for the children of miners; this year a second Radcliffe graduate has joined her. As workers in organized charities and in college settlements, as probation-officers, as teachers in public schools, especially in grammar schools, the place of all others to serve the parents through the children, Radcliffe graduates have done and are doing honorable social service. Some of them are in the distant States of the Union and in the Insular Dependencies, and Radcliffe owes to them the extension of her influence and her prestige. With this extension comes the immediate need of a second hall of residence, built to correspond outwardly to the first; but the dignity and spaciousness of Bertram Hall render superfluous any provision for large social gatherings. The second hall might, therefore, accommodate a greater number of students, and thereby, perhaps, reduce the expense of living. It is the hope of the Dean that this second hall may be "primarily for graduates," who often like a different life from that of the younger undergraduates, and who may never again have the opportunity to spend a year in advanced study among congenial companions. The life of Bertram Hall has been increasingly delightful and free from drawbacks. The Hall continues to be the centre of the social life of the College, and is as dear to the residents of to-day as to the first comers.

An important step in the development of Radcliffe has been taken during the past year by the formation of the Radcliffe College Auxiliary, a body of men and women of character and influence, who stand ready to help the College in divers ways, not the least of which is the prestige given by their support. Mrs. Richard C. Cabot, to whom the plan of the Auxiliary is due, was elected chairman. The opportunity for service came at once. The Greenleaf Estate, on Brattle Street, directly opposite the College, was offered to Radcliffe for $80,000, — a much smaller sum than the assessors' valuation. This estate adjoins another piece of land which will later become the property of the College; and it is the only estate remaining undivided in that vicinity. Fully convinced that the possession of this land is essential to the best development of the College, a committee of the Auxiliary have undertaken to raise the money. They have already secured promises of nearly $56,000, and it would be almost a calamity — certainly an undeserved one — if, for the lack of $20,000, Radcliffe were compelled to forego so great an opportunity.

One great loss the year has brought us. Sarah Wyman Whitman, a member of the Council of Radcliffe College, died on the twenty-fourth of June, 1904. Mrs. Whitman became a member of the Executive Committee of the Society for the Collegiate Instruction of Women in 1886, and from that time until the day of her death her devotion to the cause never knew a moment's chill. Her alert and high intelligence, her remarkable quickness of grasp and perception, her extraordinary power of work, her sense of beauty and fitness, made her a leader in many fields; in none was she of more vital importance than in Radcliffe, and none was nearer her heart. As in life her time and thought were lavishly spent on its wants and its interests, so in death she has made provision for its great present need, — by an unrestricted bequest of $100,000, — and for the permanent need of every college, — by the foundation of two scholarships, to be known by the name of two of her friends. What she was, and what she did, will never be forgotten; her great artistic gift has built her own memorial in the Gymnasium, in Bertram Hall, in Agassiz House, which would not have been what they are without her taste and skill. Other memorials have been provided that the College of the distant future may know her name and recognize her power. Her last work, a window made for the St. Louis Exposition, has been purchased by her friends, and will be placed in Agassiz House. A Madonna and Child, ascribed to Ghirlandajo, from four of her friends;* and an ideal bust, Death the Deliverer, the work of the late Richard Greenough, from Mrs. Barrett Wendell, have been given as memorials of her. A portrait by Alexander of Mrs. Whitman, painted for Radcliffe, has been presented to the College by Mrs. Hartman Kuhn. Elizabeth Agassiz House, in which these memorials will find their fittest place, is rapidly nearing completion, and will be finished in ample time for the Commencement of 1905.

AGNES IRWIN, *Dean.*

---

* Mr. and Mrs. Henry L. Higginson, and Mr. and Mrs. Henry Parkman.

APPENDIX.

DEATH.

[During the year ending August 31, 1904.]

Samuel Hoar, Fellow of Harvard College. April 11, 1904.

RESIGNATIONS.

[To take effect September 1, 1904, unless otherwise stated.]

Seabury Wells Allen, Assistant in Anatomy, to take effect September 1, 1903. December 28, 1903.

Fred Washington Atkinson, Lecturer on Educational Organizations. June 6, 1904.

William George Barr, Assistant in Government. September 27, 1904.

Albert Wilhelm Boesche, Instructor in German. May 9, 1904.

Haven Darling Brackett, Member of Board of Examination Proctors. January 25, 1904.

Walter Benjamin Briggs, Superintendent of the Reading Room of the College Library. June 6, 1904.

Richard Cobb, Instructor in English, and Chairman of the Appointment Committee, to take effect July 1, 1904. September 27, 1904.

Paul Revere Curtis, Assistant in Ore-dressing and Assaying, to take effect March 31, 1904. April 11, 1904.

Harold Garfield Dillingham, Member of the Committee on the Regulation of Athletic Sports. October 19, 1903.

Thomas Fillebrown, Professor of Operative Dentistry and Oral Surgery. February 29, 1904.

Jefferson Butler Fletcher, Assistant Professor of Comparative Literature. March 14, 1904.

Charles Gilman, Instructor in Mathematics and Surveying. September 27, 1904.

John Orne Green, Clinical Professor of Otology. June 6, 1904.

Roger Castle Griffin, Assistant in Chemistry. May 9, 1904.

Adams Sherman Hill, Boylston Professor of Rhetoric and Oratory. June 6, 1904.

William Barker Hills, Associate Professor of Chemistry. March 7, 1904.

Thomas Augustus Jaggar, Jr., Regent. June 28, 1904.

Edward Binney Lane, Clinical Instructor in Mental Diseases, to take effect December 26, 1903. January 11, 1904.

Abbott Lawrence Lowell, Member of Administrative Board of Graduate School for 1903–04. October 26, 1903.

Gilbert Simrall Meem, Jr., Proctor. November 9, 1903.

Hugo Richard Meyer, Lecturer on Economics, to take effect February 15, 1904. January 25, 1904.

Dickinson Sergeant Miller, Instructor in Philosophy. March 28, 1904.

Edmund Thornton Miller, Austin Teaching Fellow in Economics, to take effect January 1, 1904. January 11, 1904.

Frederic William Morrison, Assistant in French and Spanish. September 27, 1904.

William Allan Neilson, Instructor in English. January 11, 1904.

George Frederic Newton, Instructor in Designing and Drawing. June 6, 1904.

Amon Benton Plowman, Assistant in Botany. September 27, 1904.

William Herbert Prescott, Assistant in Clinical Medicine, to take effect January 18, 1904. January 25, 1904.

Adolph Rambeau, Lecturer in French. September 27, 1904.

William Richard Ransom, Instructor in Mathematics, to take effect February 13, 1904. March 14, 1904.

Frederick William Reynolds, Instructor in English. June 20, 1904.

Philip Sidney Smith, Member of Board of Examination Proctors, to take effect immediately. January 11, 1904.

James Waddell Tupper, Instructor in English. September 27, 1904.

John Albrecht Walz, Instructor in German. June 28, 1904.

Barrett Wendell, Jr., Proctor, to take effect immediately. February 29, 1904.

Evan Parker Wentworth, Instructor in Operative Dentistry. September 27, 1904.

George Shattuck Whiteside, Assistant in Anatomy. September 27, 1904.

Holden Pierce Williams, Assistant in College Office, to take effect March 1, 1904. March 28, 1904.

Robert Newton Woodworth, Assistant in Ore-dressing and Assaying. June 28, 1904.

APPOINTMENTS.

FACULTY OF ARTS AND SCIENCES.

[*Without limit of time, or for more than one year.*]

Maxime Bôcher, Professor of Mathematics from September 1, 1904. March 28, 1904.

Charles Leonard Bouton, Assistant Professor of Mathematics for five years from September 1, 1904. March 28, 1904.

Jeffrey Richardson Brackett, Instructor in Charity, Public Aid and Correction for three years from July 1, 1904. February 8, 1904.

LeBaron Russell Briggs, Boylston Professor of Rhetoric and Oratory from September 1, 1904. June 6, 1904.

George Henry Chase, Instructor in Classical Archaeology from September 1, 1904. March 28, 1904.

Archibald Cary Coolidge, Assistant Professor of History for five years from September 1, 1904. March 28, 1904.

Merritt Lyndon Fernald, Instructor in Botany and Assistant at the Gray Herbarium from September 1, 1903. November 23, 1903.

Richard Thornton Fisher, Instructor in Forestry from September 1, 1904. June 28, 1904.

Charles Burton Gulick, Assistant Professor of Greek for five years from September 1, 1904. February 29, 1904.

Adams Sherman Hill, Boylston Professor of Rhetoric and Oratory, *Emeritus*. June 6, 1904.

Edwin Bissell Holt, Instructor in Psychology from September 1, 1904. June 20, 1904.

Edward Vermilye Huntington, Instructor in Mathematics from September 1, 1904. February 29, 1904.

Robert Tracy Jackson, Assistant Professor of Palaeontology for five years from September 1, 1904. March 28, 1904.

Frank Lowell Kennedy, Assistant Professor of Drawing and Machine Design for five years from September 1, 1904. February 29, 1904.

Philippe Belknap Marcou, Assistant Professor of Romance Languages for five years from September 1, 1904. March 28, 1904.

Harry Wheeler Morse, Instructor in Physics from September 1, 1904. March 28, 1904

William Bennett Munro, Instructor in Government from September 1, 1904. January 11, 1904.

George Howard Parker, Assistant Professor of Zoölogy for five years from September 1, 1904. March 28, 1904.

Edward Dyer Peters, Professor of Metallurgy from September 1, 1904. March 28, 1904.

Murray Anthony Potter, Instructor in Romance Languages from September 1, 1904. March 28, 1904.

George Sharp Raymer, Assistant Professor of Mining for five years from September 1, 1904. April 11, 1904.

Arthur Asahel Shurtleff, Instructor in Landscape Architecture from September 1, 1903. October 26, 1903.

Henry Lloyd Smyth, Director of the Mining and Metallurgical Laboratories. February 29, 1904.

Oliver Mitchell Wentworth Sprague, Assistant Professor of Economics for five years from September 1, 1904. May 16, 1904.

Frederic Jesup Stimson, Professor of Comparative Legislation from September 1, 1904. January 11, 1904.

Herbert Langford Warren, Nelson Robinson Jr. Professor of Architecture from September 1, 1903. November 9, 1903.

Irvah Lester Winter, Assistant Professor of Elocution for five years from September 1, 1903. November 23, 1903.

James Haughton Woods, Instructor in Philosophy from September 1, 1904. February 29, 1904.

[*For 1903–04.*]

Edward Larrabee Adams, Assistant in French and Spanish. October 19, 1903.

Louis Anton Ernst Ahlers, Assistant in German. October 19, 1903.

Warren Seymour Archibald, Assistant in English. November 23, 1903.

Walter Conrad Arensberg, Assistant in English. November 23, 1903.

William George Barr, Assistant in Government. October 19, 1903.

Francis Vinal Barstow, Assistant in Chemistry. October 19, 1903.

Middleton Goldsmith Beaman, Assistant in Government. October 19, 1903.

James Mackintosh Bell, Assistant in Geology for the second half-year. March 28, 1904.

Winthrop Bellamy, Assistant in Chemistry. October 19, 1903.

HIRAM BINGHAM, Jr., Assistant in History. October 19, 1903.

STUART BLAIKIE, Assistant in Government. October 19, 1903.

LEO LEGAY BURLEY, Assistant in History. October 19, 1903.

HENRY AVERY CARLTON, Assistant in Chemistry. November 9, 1903.

LATHAM CLARKE, Assistant in Chemistry. October 19, 1903.

STUART DAGGETT, Austin Teaching Fellow in Economics from January 1, 1904, for the remainder of the current academic year. January 11, 1904.

COLBY DILL, Assistant in Chemistry. October 19, 1903.

ALFRED EDWARD ELLS, Assistant in Elocution. October 26, 1903.

GEORGE SHANNON FORBES, Assistant in Chemistry. November 9, 1903.

HARRY LOUIS FREVERT, Assistant in Chemistry. October 19, 1903.

EDMUND CARL FROEHLICH, Instructor in Mathematics. November 23, 1903.

JAMES ANDREW GIBSON, Assistant in Chemistry. October 19, 1903.

JESSE MORE GREENMAN, Assistant in the Gray Herbarium. December 28, 1903.

ROGER CASTLE GRIFFIN, Assistant in Chemistry. October 19, 1903.

FRITZ HAGENS, Assistant in German. October 19, 1903.

ANGELO HALL, Instructor in Mathematics for the second half-year. February 29, 1904.

HENRY HARDENBERGH, Assistant in Chemistry. November 9, 1903.

HENRY WYMAN HOLMES, Assistant in Education. November 9, 1903.

RICHARD FAY JACKSON, Assistant in Chemistry. October 19, 1903.

HENRY CRAIG JONES, Assistant in Government. October 19, 1903.

BURRITT SAMUEL LACY, Assistant in Chemistry. October 19, 1903.

ROLLO LUVERNE LYMAN, Instructor in Elocution. October 26, 1903.

ROBERT DAWSON MACLAURIN, Assistant in Chemistry from May 1, 1904, for the remainder of the current academic year. May 9, 1904.

EDWARD RUSSELL MARKHAM, Assistant in Shop-work. November 23, 1903.

EDMUND THORNTON MILLER, Austin Teaching Fellow in Economics. November 23, 1903.

FREDERIC WILLIAM MORRISON, Assistant in French and Spanish. October 19, 1903.

ROBERT EZRA PARK, Assistant in Philosophy. November 9, 1903.

EDGAR OSCAR PARKER, Assistant in Drawing. December 28, 1903.

EDWARD DYER PETERS, Lecturer on Metallurgy for second half-year. December 14, 1903.

WILLIAM RICHARD RANSOM, Instructor in Mathematics. November 23, 1903.

RALPH WEBSTER RICHARDS, Assistant in Geology. November 23, 1903.

LEONARD HASTINGS SCHOFF, Assistant in Chemistry. October 19, 1903.

AUGUSTUS HUNT SHEARER, Assistant in History for the second half-year. February 29, 1904.

WALTER JAMES SHEPARD, Austin Teaching Fellow in History. October 19, 1903.

HENRY ROBINSON SHIPMAN, Assistant in History. October 19, 1903.

FRANCIS WOLSON SNOW, Assistant in French and Italian. October 19, 1903.

CARL WILLIAM THOMPSON, Assistant in Elocution. November 23, 1903.

RAYNOR GREENLEAF WELLINGTON, Assistant in History. October 19, 1903.

PLUMER WHEELER, Assistant in Chemistry. October 19, 1903.

ARTHUR DICKINSON WYMAN, Assistant in Chemistry. October 19, 1903.

[*For the Calendar Year 1904.*]

CYRUS GUERNSEY PRINGLE, Botanical Collector. November 23, 1903.

[*For 1904–05.*]

Frederick Arthur Alden, Assistant in Mechanical Drawing. May 16, 1904.
George Isaac Aldrich, Lecturer on School Administration. June 6, 1904.
Oakes Ames, Instructor in Botany. March 28, 1904.
Gustavus Adolphus Anderegg, Instructor in Electrical Engineering. March 14, 1904.
Fred Washington Atkinson, Lecturer on Educational Organizations. March 28, 1904.
Charles Hamilton Ayres, Instructor in Physics. June 20, 1904.
Harry Morgan Ayres, Assistant in English. June 20, 1904.
Newton Samuel Bacon, Assistant in Hygiene. March 28, 1904.
William George Barr, Assistant in Government. March 28, 1904.
James Mackintosh Bell, Austin Teaching Fellow in Mining and Metallurgy. April 11, 1904.
Hiram Bingham, Jr., Assistant in History. April 11, 1904.
Otis Fisher Black, Assistant in the Chemical Laboratory. March 28, 1904.
Albert Wilhelm Boesche, Instructor in German. March 28, 1904.
Herbert Melville Boylston, Assistant in Metallurgical Chemistry. May 9, 1904.
Henry Cook Boynton, Instructor in Metallurgy and Metallography. March 28, 1904.
Fletcher Briggs, Austin Teaching Fellow in German. May 9, 1904.
Carleton Fairchild Brown, Instructor in English. May 9, 1904.
Frederic Willis Brown, Austin Teaching Fellow in Romance Languages. March 28, 1904.
Harold Chapman Brown, Assistant in Philosophy. June 6, 1904.
Alphonse Brun, Instructor in French. March 28, 1904.
Leslie Lyle Campbell, Assistant in Physics. June 6, 1904.
Philip Greenleaf Carleton, Instructor in English. May 9, 1904.
Edward Edgecombe Carter, Instructor in Forestry. June 20, 1904.
William Richard Castle, Jr., Assistant in English. May 9, 1904.
Arthur Houston Chivers, Austin Teaching Fellow in Botany. March 28, 1904.
Lyman Kenneth Clark, Assistant in Government. March 28, 1904.
John Felt Cole, Instructor in Astronomy. April 25, 1904.
Leon Jacob Cole, Austin Teaching Fellow in Zoölogy. June 6, 1904.
William Morse Cole, Instructor in the Principles of Accounting. March 28, 1904.
William Arnold Colwell, Instructor in German. May 9, 1904.
Frederick Shepherd Converse, Instructor in Music. June 6, 1904.
Vanderveer Custis, Assistant in Economics. June 20, 1904.
Stuart Daggett, Assistant in Economics. June 20, 1904.
Horatio Willis Dresser, Assistant in Philosophy. June 6, 1904.
William Curtis Farabee, Instructor in Anthropology. April 25, 1904.
James Alfred Field, Austin Teaching Fellow in Economics. June 20, 1904.
George Shannon Forbes, Austin Teaching Fellow in Physical Chemistry. April 25, 1904.
Harry Louis Frevert, Assistant in Chemistry. April 25, 1904.
Arthur Bowes Frizell, Instructor in Mathematics. March 28, 1904.

Charles Edmund Fryer, Assistant in History. April 11, 1904.
Benjamin Apthorp Gould Fuller, Assistant in Philosophy. June 6, 1904.
Harold DeWolf Fuller, Instructor in English. May 9, 1904.
Andrew Garbutt, Instructor in Modelling. April 25, 1904.
James Augustus George, Assistant in Government. March 28, 1904.
Jesse More Greenman, Instructor in Botany. March 28, 1904.
Roger Castle Griffin, Assistant in Chemistry. May 9, 1904.
Fritz Hagens, Instructor in German. May 9, 1904.
Thomas Hall, Jr., Instructor in English. March 28, 1904.
Lyman Sawin Hapgood, Assistant in Hygiene. March 28, 1904.
Henry Harrison Haynes, Instructor in Semitic Languages. May 9, 1904.
Arthur Stedman Hills, Instructor in Public Speaking. May 9, 1904.
Arthur Day Howard, Austin Teaching in Zoölogy. June 6, 1904.
Silas Wilder Howland, Assistant in Economics. June 20, 1904.
Percy Adams Hutchison, Assistant in Philosophy. June 6, 1904.
John Perham Hylan, Assistant in Philosophy. June 6, 1904.
John George Jack, Instructor in Forestry. June 28, 1904.
Robert Matteson Johnston, Lecturer on Modern Italian History. December 14, 1903.
Henry Craig Jones, Assistant in Government. March 28, 1904.
Harrie Stuart Vedder Jones, Assistant in English. June 20, 1904.
John Frank Langmaid, Assistant in Chemistry. March 28, 1904.
Frederick William Charles Lieder, Austin Teaching Fellow in German. May 9, 1904.
Joseph Abraham Long, Austin Teaching Fellow in Botany. April 25, 1904.
Rollo LuVerne Lyman, Instructor in English, March 28, 1904; in Public Speaking, May 9, 1904.
Albert Morton Lythgoe, Instructor in Egyptology. June 6, 1904.
George Rogers Mansfield, Austin Teaching Fellow in Geology. June 6, 1904.
Selden Osgood Martin, Assistant in Economics. June 20, 1904.
Roger Bigelow Merriman, Instructor in History. April 11, 1904.
Jared Sparks Moore, Assistant in Philosophy. June 6, 1904.
Sylvanus Griswold Morley, Instructor in Romance Languages and Literatures. March 28, 1904.
Frederic William Morrison, Assistant in French and Spanish. March 28, 1904.
Martin Mower, Instructor in Fine Arts. March 28, 1904.
William Luther Mowll, Instructor in Architecture. April 25, 1904.
James Ambrose Moyer, Instructor in Descriptive Geometry. March 28, 1904.
Arthur Edwin Norton, Instructor in Mechanical Drawing and Mathematics. March 28, 1904.
Charles Read Nutter, Instructor in English. May 9, 1904.
Frederic Austin Ogg, Assistant in History. April 11, 1904.
Robert Ezra Park, Assistant in Philosophy. June 6, 1904.
Edgar Oscar Parker, Assistant in Drawing. April 25, 1904.
Ralph Barton Perry, Instructor in Philosophy. June 20, 1904.
Francis Samuel Philbrick, Instructor in Government, February 29, 1904; Assistant in Government, March 28, 1904.
Amon Benton Plowman, Assistant in Botany. March 28, 1904.
Arthur Pope, Assistant in Fine Arts. March 28, 1904.

James Sturgis Pray, Instructor in Landscape Architecture. April 25, 1904.

Hans Hugo Pringsheim, Instructor in Industrial Chemistry. April 25, 1904.

Paul Hector Provandie, Assistant in Hygiene. March 28, 1904.

Adolph Rambeau, Lecturer in French. March 28, 1904.

Frederick William Reynolds, Instructor in English. May 9, 1904.

Ralph Webster Richards, Assistant in Mineralogy. June 20, 1904.

David Camp Rogers, Assistant in Philosophy. June 6, 1904.

Louis Ross, Austin Teaching Fellow in Applied Mechanics. March 28, 1904.

Frederick William Russe, Austin Teaching Fellow in Chemistry. March 28, 1904.

Arthur William Ryder, Instructor in Indic Philology. April 25, 1904.

Schuyler B Serviss, Assistant in Physics. June 20, 1904.

Arthur Bliss Seymour, Assistant in the Cryptogamic Herbarium. April 11, 1904.

Walter James Shepard, Austin Teaching Fellow in History. March 28, 1904.

Howard Edwin Simpson, Assistant in Meteorology, June 20, 1904; title changed to Assistant in Physiography and Meteorology, June 28, 1904.

Macy Millmore Skinner, Instructor in German. March 28, 1904.

Philip Sidney Smith, Instructor in Geology. March 28, 1904.

Francis Wolson Snow, Instructor in Romance Languages. March 28, 1904.

Charles Miner Stearns, Assistant in English. May 9, 1904.

Trumbull Stickney, Instructor in Greek. March 28, 1904.

Henry Leroy Stone, Assistant in Music. June 6, 1904.

Albert Morey Sturtevant, Instructor in German. May 9, 1904.

Walter Dana Swan, Instructor in Architecture. April 25, 1904.

Thomas Head Thomas, Austin Teaching Fellow in Fine Arts. March 28, 1904.

James Waddell Tupper, Instructor in English. May 9, 1904.

Arthur Tyng, Austin Teaching Fellow in Engineering. March 28, 1904.

Charles Marshall Underwood, Jr., Assistant in Italian. March 28, 1904.

Robert Palfrey Utter, Assistant in English. May 9, 1904.

Clement Leslie Vaughan, Assistant in Philosophy. June 6, 1904.

Harold Broadfield Warren, Instructor in Freehand Drawing. April 25, 1904.

Hermann Julius Weber, Instructor in German. May 9, 1904.

Kenneth Grant Tremayne Webster, Instructor in English. February 29, 1904.

Edgar Huidekoper Wells, Instructor in English. March 28, 1904.

Roger Clark Wells, Instructor in Physical Chemistry. April 25, 1904.

Stephen Edgar Whiting, Instructor in Electrical Engineering. March 28, 1904.

Arthur Fisher Whittem, Austin Teaching Fellow in Romance Languages. March 28, 1904.

Bertel Glidden Willard, Instructor in Public Speaking. May 9, 1904.

Robert Newton Woodworth, Assistant in Ore-dressing and Assaying. April 11, 1904.

Chester Whitney Wright, Austin Teaching Fellow in Economics. June 20, 1904.

Arthur Dickinson Wyman, Assistant in Chemistry. March 28, 1904.

Robert Mearns Yerkes, Instructor in Comparative Psychology. June 6, 1904.

MEMBER OF THE ADMINISTRATIVE BOARD OF THE LAWRENCE SCIENTIFIC SCHOOL.

[*For 1903–04.*]

CHARLES HENRY WHITE. October 26, 1903.

PROCTORS.

[*For 1903–04.*]

ADELBERT AMES, Jr. October 19, 1903.
HARRY MORGAN AYRES. February 29, 1904, for the remainder of the current academic year.
WILLIAM GEORGE BARR. October 19, 1903.
GEORGE ALONZO BARTLETT. February 29, 1904, for the remainder of the current academic year.
LEON GAGE BEELEY. October 19, 1903.
CHARLES WILSON BROWN. October 19, 1903.
MORRIS RUGGLES BROWNELL. February 29, 1904, for the remainder of the current academic year.
WADDILL CATCHINGS. October 19, 1903.
PAUL BLANCHARD FISCHER. October 19, 1903.
ADAMS LEOPOLD HASKELL. November 9, 1903.
ROYAL HATCH. October 19, 1903.
EDWIN WILLIAM PAHLOW. November 9, 1903.
JOSEPH OSBORNE PROCTER, 3d. October 19, 1903.
EARNEST EVERETT SMITH. November 9, 1903.
CHARLES MINER STEARNS. November 9, 1903.
WALTER SHELDON TOWER. November 9, 1903.
ROBERT PALFREY UTTER. January 25, 1904.
EDWARD HARMON VIRGIN. October 19, 1903.
HOLDEN PIERCE WILLIAMS. November 9, 1903.

[*For 1904–05.*]

FRANCIS RAYMOND STURTEVANT, Proctor of Divinity Hall. June 20, 1904.

MEMBERS OF THE BOARD OF EXAMINATION PROCTORS.

NOVEMBER 9, 1903.

BIRD THOMAS BALDWIN.
WILLIAM LESTER BARNES.
HAVEN DARLING BRACKETT.
LYMAN KENNETH CLARK.
STUART DAGGETT.
BERNARD CAPEN EWER.
GEORGE SHANNON FORBES.
CHARLES EDMUND FRYER.
JAMES AUGUSTUS GEORGE.
JAMES WALTER GOLDTHWAIT.
LYMAN SAWIN HAPGOOD.
ADAM LEOPOLD HASKELL.
JOHN PERHAM HYLAN.
JOHN ROBERT JOHNSTON.
HENRY CRAIG JONES.
JOHN FRANK LANGMAID.
ROLLO LUVERNE LYMAN.
THOMAS CALVIN MCKAY.
ARTHUR BECKWITH MYRICK.
JAMES BLAIR NEWELL.
CHARLES READ NUTTER.
JAMES HORACE PATTEN.
FREDERICK WILLIAM REYNOLDS.
GUY HALL ROBERTS.

Grant Smith.
Philip Sidney Smith.
Henry Smith Thompson.
Walter Sheldon Tower.
James Waddell Tupper.
Roger Clark Wells.
Arthur Fisher Whittem.
Henry Oscar Wood.
Chester Whitney Wright.
Arthur Dickinson Wyman.
Henry Aaron Yeomans.

LAW SCHOOL.

[*Without limit of time, or for more than one year.*]

Robert Bowie Anderson, Assistant Librarian. November 23, 1903.

Edward Henry Warren, Assistant Professor of Law for five years from September 1, 1904.

Jens Iverson Westengard, Assistant Professor of Law for five years from September 1, 1904.

MEDICAL SCHOOL.

[*Without limit of time, or for more than one year.*]

Charles Montraville Green, Associate Professor of Obstetrics and Clinical Gynaecology from September 1, 1904. April 25, 1904.

Edward Hall Nichols, Assistant Professor of Surgical Pathology for five years from September 1, 1904. June 6, 1904.

Myles Standish, Assistant Professor of Ophthalmology for five years from September 1, 1904. April 25, 1904.

[*For 1903–04.*]

William Thomas Bailey, Assistant in Histology and Embryology. November 9, 1903.

Walter Remsen Brinckerhoff, Assistant in Pathology. November 9, 1903.

Francis Parkman Denny, Assistant in Clinical Medicine for the remainder of the current academic year. February 29, 1904.

Charles Hunter Dunn, Assistant in Pediatrics. November 9, 1903.

William Noyes, Clinical Instructor in Mental Diseases for the remainder of the current academic year. March 7, 1904.

William Henry Robey, Jr., Assistant in Clinical Medicine for the remainder of the current academic year. February 29, 1904.

Samuel Robinson, Assistant in Anatomy. November 9, 1903.

Elmer Ernest Southard, Instructor in Neuropathology, from January 1, 1904, for the remainder of the current academic year. January 11, 1904.

[*For 1904–05.*]

Carl Lucas Alsberg, Assistant in Physiological Chemistry. June 20, 1904.

George Sherwin Clarke Badger, Assistant in the Theory and Practice of Physic. June 20, 1904.

Franklin Greene Balch, Assistant in Surgery. June 20, 1904.

Henry Harris Aubrey Beach, Lecturer on Surgery. June 20, 1904.

John Bapst Blake, Instructor in Surgery. June 20, 1904.

Elliott Gray Brackett, Assistant in Orthopedics. June 20, 1904.

John Lewis Bremer, Instructor in Histology and Embryology. June 20, 1904.

George Washington Wales Brewster, Assistant in Surgery. June 20, 1904.

Walter Remsen Brinckerhoff, Assistant in Pathology. June 20, 1904.

William Allen Brooks, Jr., Assistant in Surgery. June 20, 1904.

Herbert Rutherford Brown, Austin Teaching Fellow in Comparative Pathology. June 20, 1904.

Charles Shorey Butler, Assistant in Anatomy. June 20, 1904.

Richard Clarke Cabot, Instructor in Clinical Medicine. June 20, 1904.

David Cheever, Assistant in Anatomy. June 20, 1904.

Henry Asbury Christian, Instructor in Pathology. June 20, 1904.

Edmund Wright Clap, Assistant in Ophthalmology. June 20, 1904.

Frederic Codman Cobb, Assistant in Laryngology. June 20, 1904.

Ernest Amory Codman, Assistant in Surgery. June 20, 1904.

Rockwell Augustus Coffin, Assistant in Laryngology. June 20, 1904.

John Matthew Connolly, Assistant in Chemistry. June 20, 1904.

Algernon Coolidge, Jr., Clinical Instructor in Laryngology. June 20, 1904.

Edward Cowles, Clinical Instructor in Mental Diseases. June 20, 1904.

George Arthur Craigin, Clinical Instructor in Pediatrics. June 20, 1904.

LeRoi Goddard Crandon, Assistant in Surgery. June 20, 1904.

Eugene Anthony Crockett, Assistant in Otology. June 20, 1904.

Elbridge Gerry Cutler, Instructor in the Theory and Practice of Physic. June 20, 1904.

John Dane, Assistant in Orthopedics. June 20, 1904.

Lincoln Davis, Instructor in Anatomy. June 20, 1904.

Thomas Amory DeBlois, Clinical Instructor in Laryngology. June 20, 1904.

Francis Parkman Denny, Assistant in Clinical Medicine. June 20, 1904.

James Crowley Donoghue, Assistant in Histology. June 20, 1904.

Charles Hunter Dunn, Assistant in Pediatrics. June 20, 1904.

Samuel Holmes Durgin, Lecturer on Hygiene. June 20, 1904.

John Wheelock Elliott, Lecturer on Surgery. June 20, 1904.

Robert Leonard Emerson, Instructor in Physiological Chemistry. June 20, 1904.

Eugene Ellsworth Everett, Assistant in Bacteriology. June 20, 1904.

John Woodford Farlow, Clinical Instructor in Laryngology. June 20, 1904.

William Edward Faulkner, Assistant in Surgery. June 20, 1904.

Elisha Flagg, Assistant in Anatomy. June 20, 1904.

Leo Victor Friedman, Assistant in Obstetrics. June 20, 1904.

Langdon Frothingham, Austin Teaching Fellow in Bacteriology. June 20, 1904.

George Washington Gay, Lecturer on Surgery. June 20, 1904.

Joel Ernest Goldthwait, Assistant in Orthopedics. June 20, 1904.

Charles Montraville Green, Secretary to the Faculty of Medicine. June 20, 1904.

Robert Battey Greenough, Assistant in Surgery. June 20, 1904.

Philip Hammond, Assistant in Otology. June 20, 1904.

Francis Bishop Harrington, Lecturer on Surgery. June 20, 1904.

Henry Hill Haskell, Assistant in Ophthalmology. June 20, 1904.

Henry Fox Hewes, Instructor in Clinical Chemistry. June 20, 1904.

Hibbert Winslow Hill, Instructor in Bacteriology. June 20, 1904.

Edwin Everett Jack, Assistant in Ophthalmology. June 20, 1904.

Henry Jackson, Instructor in Clinical Medicine. June 20, 1904.

James Marsh Jackson, Assistant in Clinical Medicine. June 20, 1904.

Daniel Fiske Jones, Assistant in Surgery. June 20, 1904.

James Oscar Jordan, Assistant in Materia Medica. June 20, 1904.

Elliott Proctor Joslin, Assistant in the Theory and Practice of Physic. June 20, 1904.

Clarence Whittier Keene, Assistant in Neuropathology and in Pathology. June 20, 1904.

Philip Coombs Knapp, Clinical Instructor in Diseases of the Nervous System. June 20, 1904.

Maynard Ladd, Assistant in Pediatrics. June 20, 1904.

Frederic Thomas Lewis, Instructor in Histology and Embryology. June 20, 1904.

Edwin Allen Locke, Assistant in Clinical Medicine. June 20, 1904.

Howard Augustus Lothrop, Instructor in Surgery. June 20, 1904.

Robert Williamson Lovett, Assistant in Orthopedics. June 20, 1904.

Fred Bates Lund, Assistant in Surgery. June 20, 1904.

George Burgess Magrath, Assistant in Pathology. June 20, 1904.

Henry Orlando Marcy, Jr., Assistant in Anatomy. June 20, 1904.

Samuel Steen Maxwell, Instructor in Physiology. June 20, 1904.

Samuel Jason Mixter, Lecturer on Surgery. June 20, 1904.

George Howard Monks, Lecturer on Surgery. June 20, 1904.

John Lovett Morse, Instructor in Pediatrics. June 20, 1904.

Harris Peyton Mosher, Assistant in Laryngology, and Assistant in Anatomy. June 20, 1904.

James Gregory Mumford, Instructor in Surgery. June 20, 1904.

John Cummings Munro, Lecturer on Surgery. June 20, 1904.

Fred Towsley Murphy, Assistant in Anatomy. June 20, 1904.

Franklin Spilman Newell, Instructor in Obstetrics, and Assistant in Gynaecology. June 20, 1904.

William Noyes, Clinical Instructor in Mental Diseases. June 20, 1904.

Calvin Gates Page, Assistant in Bacteriology. June 20, 1904.

Henry Joseph Perry, Assistant in Bacteriology. June 20, 1904.

Charles Allen Porter, Instructor in Surgery. June 20, 1904.

Abner Post, Instructor in Syphilis. June 20, 1904.

Joseph Hersey Pratt, Assistant in the Theory and Practice of Physic. June 20, 1904.

Alexander Quackenboss, Assistant in Ophthalmology. June 20, 1904.

Frank Linden Richardson, Austin Teaching Fellow in Surgery. June 20, 1904.

William Henry Robey, Jr., Assistant in Clinical Medicine, and Assistant in Bacteriology. June 20, 1904.

Samuel Robinson, Assistant in Anatomy. June 20, 1904.

David Daniel Scannell, Assistant in Anatomy. June 20, 1904.

Charles Morton Smith, Assistant in Syphilis. June 20, 1904.

William Henry Smith, Assistant in Clinical Medicine. June 20, 1904.

Elmer Ernest Southard, Instructor in Neuropathology. June 20, 1904.

Fred Maurice Spalding, Assistant in Ophthalmology. June 20, 1904.

Arthur Kingsbury Stone, Assistant in the Theory and Practice of Physic. June 20, 1904.

Malcolm Storer, Assistant in Gynaecology. June 20, 1904.

Howard Townsend Swain, Assistant in Obstetrics. June 20, 1904.

Ewing Taylor, Austin Teaching Fellow in Histology and Embryology. June 20, 1904.

Edward Wyllys Taylor, Assistant in Neurology. June 20, 1904.

Paul Thorndike, Instructor in Genito-Urinary Surgery. June 20, 1904.

James Rockwell Torbert, Assistant in Obstetrics. June 20, 1904.

Ernest Edward Tyzzer, Assistant in Pathology. June 20, 1904.

Maurice Paul Octave Vejux-Tyrode, Instructor in Pharmacology. June 20, 1904.

Herman Frank Vickery, Instructor in Clinical Medicine. June 20, 1904.

Richard Goodwin Wadsworth, Assistant in Anatomy. June 20, 1904.

David Harold Walker, Assistant in Hygiene. June 20, 1904.

George Lincoln Walton, Clinical Instructor in Diseases of the Nervous System. June 20, 1904.

George Arthur Waterman, Assistant in Neurology. June 20, 1904.

Francis Sedgwick Watson, Lecturer on Genito-Urinary Surgery. June 20, 1904.

Charles James White, Instructor in Dermatology. June 20, 1904.

Franklin Warren White, Assistant in the Theory and Practice of Physic. June 20, 1904.

George Shattuck Whiteside, Assistant in Anatomy. June 20, 1904.

Charles Francis Withington, Instructor in Clinical Medicine. June 20, 1904.

James Homer Wright, Instructor in Pathology. June 20, 1904.

Ernest Boyer Young, Assistant in Gynaecology. June 20, 1904.

DENTAL SCHOOL.

[*Without limit of time, or for more than one year.*]

William Henry Potter, Professor of Operative Dentistry from September 1, 1904. April 11, 1904.

[*For 1904–05.*]

Lawrence Wills Baker, Instructor in Orthodontia. June 20, 1904.

Edwin Carter Blaisdell, Instructor in Operative Dentistry. June 20, 1904.

Frederick Bradley, Instructor in Operative Dentistry. June 20, 1904.

Asher Harriman St. Clair Chase, Assistant Demonstrator of Mechanical Dentistry. June 20, 1904.

Ernest Howard Chute, Instructor in Mechanical Dentistry. June 20, 1904.

Dwight Moses Clapp, Clinical Lecturer on Operative Dentistry. June 20, 1904.

Harold DeWitt Cross, Demonstrator of Mechanical Dentistry. June 20, 1904.

Horace Amos Davis, Instructor in Operative Dentistry. June 20, 1904.

Dwight Ward Dickinson, Demonstrator of Operative Dentistry. June 20, 1904.

John Dana Dickinson, Clinical Instructor in Mechanical Dentistry. June 20, 1904.

John Walker Dickinson, Instructor in Mechanical Dentistry. June 20, 1904.

Forrest Greenwood Eddy, Instructor in Operative Dentistry. June 20, 1904.

Arthur Warren Eldred, Instructor in Mechanical Dentistry. June 20, 1904.

John Irving Esgate, Instructor in Operative Dentistry. June 20, 1904.

John Wesley Estabrooks, Instructor in Mechanical Dentistry. June 20, 1904.

James Austin Furfey, Instructor in Operative Dentistry. June 20, 1904.

Harry Linwood Grant, Instructor in Mechanical Dentistry. June 20, 1904.

Amos Irving Hadley, Instructor in Mechanical Dentistry. June 20, 1904.

Thomas Bernard Hayden, Instructor in Mechanical Dentistry. June 20, 1904.

Elbridge Decosmos King, Instructor in Operative Dentistry. June 20, 1904.

Marquis D Littig, Instructor in Operative Dentistry. June 20, 1904.

Charles Winthrop McPherson, Instructor in Operative Dentistry. June 20, 1904.

Elmer Joseph Marston, Instructor in Operative Dentistry. June 20, 1904.

Harry Snow Parsons, Instructor in Mechanical Dentistry. June 20, 1904.

Joseph Totten Paul, Instructor in Operative Dentistry. June 20, 1904.

Charles Ernest Perkins, Instructor in Operative Dentistry. June 20, 1904.

Norman Greene Reoch, Instructor in Orthodontia. June 20, 1904.

Charles William Rodgers, Assistant in Dental Materia Medica. June 20, 1904.

Melville Forrest Rogers, Instructor in Operative Dentistry. June 20, 1904.

Harry Benjamin Shuman, Instructor in Oral Surgery. June 20, 1904.

Henry Carlton Smith, Austin Teaching Fellow in Dental Chemistry. March 7, 1904.

David Frederick Spinney, Instructor in Mechanical Dentistry. June 20, 1904.

Wilfred Harlow Starratt, Instructor in Operative Dentistry. June 20, 1904.

Arthur Henry Stoddard, Clinical Lecturer in Mechanical Dentistry. June 20, 1904.

Edward Wyllys Taylor, Instructor in Neurology. June 20, 1904.

Evan Parker Wentworth, Instructor in Operative Dentistry. June 20, 1904.

Robert Whitehill, Instructor in Operative Dentistry. June 20, 1904.

BUSSEY INSTITUTION.

[*For 1903–04.*]

Charles Gilman, Instructor in Mathematics and Surveying. October 19, 1903.

[*For 1904–05.*]

Daniel Allen Clarke, Assistant in Horticulture. March 14, 1904.

Frank Thompson Dillingham, Instructor in Agricultural Chemistry. June 20, 1904.

Charles Gilman, Instructor in Mathematics and Surveying. June 20, 1904.

John Hamilton Robinette, Instructor in Agriculture. June 20, 1904.

OBSERVATORY.

William Henry Pickering, Assistant Professor of Astronomy for five years from September 1, 1904. June 6, 1904.

OTHER APPOINTMENTS.

[*Without limit of time, or for more than one year.*]

Hiram Bingham, Jr., Curator of South American History and Literature from September 1, 1903. October 26, 1903.

Francis Dohs, Instructor in Gymnastics. March 28, 1904.

Harry Nelson Gay, Curator of Italian History of the 19th century from September 1, 1903. October 26, 1903.

Richard Alexander Fullerton Penrose, Jr., Associate of University Museum in Geology for three years from September 1, 1903. February 8, 1904.

Charles Joshua Ramsdell, Steward of the Randall Hall Association. October 19, 1903.

Frank Springer, Associate of University Museum in Palaeontology for five years from September 1, 1903. February 8, 1904.

Charles Miner Stearns, Chairman of the Parietal Board from September 1, 1904. June 28, 1904.

Henry Smith Thompson, Secretary for Appointments from July 1, 1904. June 28, 1904.

Andrew Gray Weeks, Jr., Associate of University Museum in Entomology for two years from September 1, 1903. February 8, 1904.

Edgar Huidekoper Wells, Curator of Modern English Literature from September 1, 1903. November 9, 1903.

Holden Pierce Williams, Assistant in College Office from September 1, 1903. November 9, 1903.

[*For 1903–04.*]

Adolf Hemple, Associate of University Museum in Zoölogy. February 8, 1904.

[*For 1904–05.*]

Herbert Melville Boylston, Auditor of the Randall Hall Association. June 20, 1904.

PREACHERS TO THE UNIVERSITY.

May 16, 1904.

Lyman Abbott.
Henry Van Dyke.
William Wallace Fenn.
Floyd Williams Tomkins.
John Heyl Vincent.

COMMITTEE ON FOGG ART MUSEUM.

Francis Bullard, June 6, 1904.
Arthur Tracy Cabot, May 9, 1904.
Edward Waldo Forbes, May 9, 1904.
Charles Herbert Moore, May 9, 1904.
Denman Waldo Ross, May 9, 1904.
Herbert Langford Warren, May 9, 1904.
John Henry Wright, June 6, 1904.

COMMITTEE ON THE REGULATION OF ATHLETIC SPORTS.

June 6, 1904.

Faculty Members:	*Graduate Members:*
Abram Piatt Andrew.	Norman Williams Bingham, Jr.
Archibald Cary Coolidge.	Edward Hall Nichols.
Horatio Stevens White.	Thomas Nelson Perkins.

TRUSTEES OF THE MUSEUM OF FINE ARTS.

November 23, 1903.

William Sturgis Bigelow.
Arthur Tracy Cabot.
John Templeman Coolidge, Jr.

TRUSTEES OF THE HARVARD UNION.

June 28, 1904.

Charles Francis Adams, 2d.
William C. Boyden.

SUMMER SCHOOL FOR PORTO RICAN TEACHERS.

OFFICERS OF INSTRUCTION AND MANAGEMENT.

In charge of Instruction and Excursions in the absence of the President.

Jerome Davis Greene.

TEACHERS OF ENGLISH.

Elementary Classes.

Harriet Miriam Cutler.
Alphonse Marin La Meslée.
Mary Theresa Loughlin.
Frederic William Morrison.
Andrew Paul Raggio.

Intermediate Classes.

Lillian Estelle Clark.
Antonio Alfredo Capotosto.
Nellie Isabel Simpson.
Albert Leslie Pitcher.
Joseph Smith.

Advanced Classes.

Elizabeth Forbes.
Peter Hair Goldsmith.

LECTURERS.

Frederic M. Noa, six lectures on Cuba and South America.
Peter H. Goldsmith, six lectures on Mexico and the Southern States.
William MacDonald, three lectures on American History.
Eugene Abraham Darling, three lectures on Hygiene.
William W. Ellsworth, six lectures on the American Revolution.
Philip Sidney Smith, six lectures on American Geography (cancelled).
George I. Aldrich, four lectures on the American Educational System.

In charge of Transportation, Lodging, and Baggage Arrangements on arrival.

Howard Lane Blackwell.
Harvey Nathaniel Davis.
Lewis Wendell Hackett.

TEXT-BOOKS AND READERS.

Class	Teacher	No. of Pupils	Grade	Books
1	Forbes	38	Advanced	Arnold and Kittredge's Mother Tongue II; Goldsmith's El Idioma Inglés, Book III. Irving's Sketch Book.
2	Simpson	33	Intermediate	Arnold and Kittredge's Mother Tongue II; Irving's Sketch Book.
3	Clark	28	Intermediate	The same as in Class 2.
4	Cutler	30	Elementary	Arnold and Kittredge's Mother Tongue I; Stories from Hawthorne.
5	Loughlin	16	Elementary	Arnold and Kittredge's Mother Tongue I; Dickens's Christmas Carol.
6	Goldsmith	22	Advanced	The same as in Class 1.
7	Pitcher	25	Intermediate	Goldsmith's El Idioma Inglés, Book III; Defoe's Robinson Crusoe (abridged).
8	Smith	26	Intermediate	Arnold and Kittredge's Mother Tongue II; Ybarra's English-Spanish Method.
9	Capotosto	21	Intermediate	Carrington's Beacon Lights of Patriotism.
10	Morrison	28	Elementary	Ybarra's English-Spanish Method.
11	La Meslée	18	Elementary	Ybarra's English-Spanish Method.
12	Raggio	23	Elementary	Goldsmith's El Idioma Inglés, Books I and III.
13	Sawyer * McKenzie *	13	Elementary	Arnold and Kittredge's Mother Tongue I.

EXCURSIONS.

[*Tickets at 10 cents each for the Wednesday excursions, and 25 cents each for the Saturday excursions, were sold through the Section Chiefs.*]

Saturday,	July 16.	Norumbega Park; Concord; Blue Hill.
Wednesday,	July 20.	"Youth's Companion" Office; Boston Museum of Fine Arts; Riverside Press; Athenaeum Press; Cambridge Public School Buildings.
Thursday,	July 21.	Mechanic Arts High School and Vacation Schools, Boston (on the invitation of Mr. James J. Storrow, of the Boston School Committee).
Wednesday,	July 27.	"Youth's Companion" Office; Museum of Fine Arts; Public Library, Boston; Athenaeum Press; Cambridge Public School Buildings.
Thursday,	July 28.	W. L. Douglas Shoe Factory (for the men — on the invitation of Mr. A. F. Estabrook); Wellesley College (for the women — on the invitation of Mr. and Mrs. S. M. Lindsay).

---

* These teachers were detailed by the Commissioner of Education to teach the class containing the most backward pupils.

Saturday,	July 30.	Norumbega Park; Concord.
Wednesday,	August 3.	"Youth's Companion" Office; Museum of Fine Arts; Public Library, Boston; Athenaeum Press; Cambridge Public School Buildings.
Friday,	August 5.	Estate of Mr. J. Montgomery Sears, Southborough (for the men — on the invitation of Mr. Sears).

LABORATORY VISITS.

[*For teachers especially interested in Science.*]

Tuesday,	July 19.	Zoölogical Laboratory.
Tuesday,	July 26.	Jefferson Physical Laboratory.
Friday,	July 29.	Chemical Laboratory.
Thursday,	August 4.	Astronomical Observatory.

PORTO RICAN SUMMER SCHOOL LEASE.

CAMBRIDGE, MASS.,

June............, 1904.

I hereby agree to lease to Harvard University........................furnished rooms, described below, for.....................Spanish, or colored, Porto Rican $\genfrac{}{}{0pt}{}{\text{women}}{\text{men}}$ teachers, for about six weeks, beginning July 2, or on their arrival, if delayed, and ending about August 15, or a day or two earlier or later, for the sum of.....,..............per person per week, and fractions of a week proportionally.

I agree to care for these rooms satisfactorily and properly, to furnish clean linen and towels, to supply good lamps, or gas, and to offer the use of bath-room and of a parlor at any time.

I further agree that I will take no $\genfrac{}{}{0pt}{}{\text{men}}{\text{women}}$ as lodgers during this time.

This lease is subject to termination if any part of the above agreement be not kept, or if the city inspector of plumbing shall disapprove the sanitary conditions.

DESCRIPTION OF ROOMS.

Floor.	Exposure of windows.	Number of beds.	Number of occupants.

Signed..

Street and number..

CONCURRENT RESOLUTION OF CONGRESS AUTHORIZING THE TRANSPORTATION OF THE PORTO RICAN TEACHERS TO THE UNITED STATES.

(58th Congress, 2d Session, Concurrent Resolution No. 26.)

Resolved by the House of Representatives (the Senate concurring), That the Secretary of War be, and he is hereby, authorized and directed during the year nineteen hundred and four, at such time as requested by the governor of the island of Porto Rico, to transport from the island of Porto Rico to the United States and to return from the United States to Porto Rico, on one or more of the vessels engaged in the transport service of the United States, not to exceed six hundred of the teachers in the public schools of said island, such teachers to be selected by the Commissioner of Education of said island, for the purpose of attending the various summer schools of the universities, colleges, and other institutions of learning in the United States during said year: *Provided,* That the Government of the United States shall not be liable for, and shall not defray, the expenses of said teachers, or of any of them, incurred while in the United States.

FINANCIAL STATEMENT.

INSTRUCTION.

English Instruction (12 instructors at $150 each)	$1800.00
Instruction in Summer Schools (31 pupils at $12.50 each)	387.50
Lectures (36 at $33.33 each)	1199.88
Superintendence of Instruction and of Excursions	250.00
Books and Stationery	298.42
Printing by College Press	73.55
Sundries: — Carriage, $5; Water cooler, $5.40; Gas and Electricity at Gymnasium, $11.10; Services of 3 men at Gymnasium, four nights at $5 a night, $20; Lantern operator, $16.50; Special car to Observatory, $3; Express, $1.20; Miscellaneous, $3.94	66.14
	$4075.49

The above expenses were charged to the Porto Rican Expedition at the rate of $12.50 per person for 326 persons, — total, $4075.00.

BOARD AT SUMMER SCHOOL RESTAURANT.

Three hundred and forty-one six weeks' certificates at $18	$6138.00
Less allowance for early departure	350.00
	5788.00
Additional for 150 visitors, August 8	30.00
	$5818.00

LODGING.

The bills for lodging 351 persons 5½ weeks, amounting to $3208.97 (average $1.66 each per week), were certified by the Business Manager of the Expedition, and paid by the Expedition through the Bursar of the University.

LETTER FROM MEMBERS OF THE SUMMER SCHOOL OF THEOLOGY.

To the President, the Corporation, and the Theological Faculty of Harvard University: —

Gentlemen, — At a meeting of the members of the Summer School of Theology, held July 19th, 1904, Rev. Prescott Evarts presiding, the following Committee was appointed to prepare a paper expressing the appreciation felt by those who have enjoyed the excellent course of instruction this year provided: —

The Rev. Leonard Woolsey Bacon, Assonet, Mass.
" Arthur Leolin Howe, Wilbraham, Mass.
" Richard Wilson Boynton, St. Paul, Minn.
" Frederick Harlan Page, Lawrence, Mass.
" George Lyman Paine, Dorchester, Mass.
" Langley Barnas Sears, Groton, Conn.

At a meeting held on the following day, July 20th, this Committee reported the following resolution, and it was unanimously adopted: —

To the President, the Corporation, and the Theological Faculty of Harvard University: —

Gentlemen, — We, the members of the Summer School of Theology for 1904, desire to express to you first of all our high and grateful appreciation of the privileges we have enjoyed in the term now closing. We recognize in the learned and able instructions to which we have listened, not only a source of rare intellectual and spiritual enjoyment, but a preparation for greater efficiency in that work of the Christian ministry in which we are engaged.

We are eager to prove the sincerity of our gratitude by commending to others, in future summers, the privileges which we so highly value for ourselves. We assure you of our unanimous willingness to coöperate with you, by such ways as may be open to us, in widening the effective usefulness of the School.

It seems to us of public importance, not only that such facilities for summer study be provided for those engaged in the profession of the ministry, but that they be provided here at Cambridge. We need emphasize only one of the many obvious reasons for this: beside the singular natural and historical charms of the place, its vast resources in libraries and museums, and its ample accommodations for sojourners at moderate cost, it has the crowning advantage of being above all others the place for the gathering of scholars of the widest diversity of opinions and ecclesiastical relations. It is our hope that such influence as we may severally or collectively exert may tend to emphasize this comprehensive character of the School.

We should be pleased to receive from you whatever suggestions you might wish to make. Meanwhile, as a sort of Alumni Association thus informally constituted, we hold ourselves ready, as occasion may require, to take whatever steps may tend to enlarge the membership of the School.

At a subsequent meeting it was voted to continue the above named Committee as a permanent representative of this informal association, Rev. Leonard Woolsey Bacon acting as chairman.

(Signed) Prescott Evarts,
Chairman of the Meeting.
Loren B. Macdonald,
Secretary.

TABLE I.

ILLNESS REPORT, 1903–04.

Diseases.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Appendicitis	5	1	1	2	2	7	3	3	2	26
Asthma	1	1	1	3	2	1	3	1	..	13
Bronchitis	3	16	10	20	13	11	8	7	..	88
Chicken-pox	..	1	3	2	..	..	..	..	..	6
Colds — unclassified	118	144	107	163	78	153	95	33	3	894
Constipation	2	2	1	1	..	1	1	1	..	9
Coryza	7	9	6	10	15	10	3	1	..	61
Dentistry	6	16	9	10	5	21	15	3	2	87
Diarrhoea	31	29	11	20	8	19	29	7	..	154
Diphtheria	1	4	5	..	1	1	..	1	..	13
Ear, of the	2	1	4	5	4	7	2	..	..	25
Eye, of the	18	40	20	13	29	53	27	20	6	226
General Debility	7	19	18	9	19	9	7	9	1	98
Headache	15	24	16	23	12	25	16	11	2	144
Indigestion	61	66	83	51	34	76	54	53	3	481
Insomnia	1	2	4	..	4	4	..	..	..	15
Jaundice	6	3	1	5	3	2	..	..	..	20
La Grippe	13	26	22	29	67	99	42	9	..	307
Laryngitis	..	3	7	6	3	..	3	3	..	25
Malaria	2	5	4	2	1	2	5	5	..	26
Measles	..	..	..	..	11	29	19	13	3	75
Miscellaneous	24	42	39	36	30	54	46	25	8	304
Mumps	..	..	..	3	2	8	12	3	..	28
Neuralgia	4	8	4	8	5	12	8	6	..	55
Overwork	9	9	2	3	6	8	7	6	3	53
Pharyngitis	11	27	59	22	17	30	21	11	3	201
Pneumonia	..	1	1	1	2	2	1	1	..	9
Rheumatism	5	8	9	5	8	13	6	3	..	57
Scarlet Fever	1	2	1	..	1	1	..	1	..	7
Skin, of the	4	8	12	5	6	8	10	5	2	60
Surgical	50	72	34	45	30	53	45	45	3	377
Tonsillitis	12	42	29	76	38	33	22	18	10	280
Typhoid	1	1	..	3	..	..	2	1	..	8
Totals	420	632	523	581	456	752	512	305	51	4232

Visits	**1137**
Office consultations	**3056**
Total number of consultations	**4193**
Calls on students not found in (not included in above)	**268**
Other cases not seen by the Medical Visitor	**2800**

TABLE II.

ILLNESS REPORT AS RELATED TO THE DIFFERENT SCHOOLS.

Diseases.	College.					Scientific.					Law.	Graduate.	Divinity.	Totals.
	1	2	3	4	Sp.	1	2	3	4	Sp.				
Appendicitis	7	3	2	1	1	2	..	1	..	1	4	3	1	26
Asthma	4	7	2	..	..	..	..	..	..	..	..	..	..	13
Bronchitis	25	32	17	6	1	1	2	1	1	..	1	1	..	88
Chicken-pox	2	2	1	..	..	..	..	..	1	..	..	..	..	6
Colds, unclassified	212	306	149	85	26	18	38	15	15	20	3	5	2	894
Constipation	2	..	..	2	..	1	2	..	..	1	1	..	..	9
Coryza	19	18	10	4	1	2	1	..	2	..	3	1	..	61
Dentistry	25	31	14	7	2	2	2	1	..	2	1	..	..	87
Diarrhoea	26	60	34	7	4	6	5	5	2	5	..	..	..	154
Diphtheria	4	..	..	4	1	..	1	..	..	..	2	1	..	13
Ear, of the	5	6	5	7	1	1	..	..	..	..	..	..	..	25
Eye, of the	63	66	36	27	4	4	10	10	3	2	1	..	..	226
General Debility	20	29	15	18	5	..	2	2	1	2	2	2	..	98
Headache	61	37	16	10	4	6	3	..	3	3	1	..	..	144
Indigestion	124	157	78	44	18	13	12	10	6	7	7	5	..	481
Insomnia	4	6	1	1	1	1	..	..	..	..	1	..	..	15
Jaundice	3	5	3	2	..	1	1	..	..	1	1	3	..	20
La Grippe	79	89	52	29	11	9	12	6	6	2	9	3	..	307
Laryngitis	5	5	10	2	..	..	1	1	..	..	1	..	..	25
Malaria	2	6	7	3	1	..	2	1	..	..	2	2	..	26
Measles	10	14	12	8	2	3	6	2	3	4	7	3	1	75
Miscellaneous	72	83	51	36	11	5	6	4	3	8	12	12	1	304
Mumps	3	13	4	3	..	..	1	1	..	..	1	1	1	28
Neuralgia	11	19	7	11	1	2	1	1	..	1	..	1	..	55
Overwork	3	11	9	7	1	2	1	1	1	4	5	6	2	53
Pharyngitis	52	68	36	13	2	7	7	6	2	4	2	2	..	201
Pneumonia	2	2	2	..	1	1	..	..	..	..	1	..	..	9
Rheumatism	12	12	16	13	..	1	2	..	1	1	..	..	..	57
Scarlet Fever	1	1	1	1	..	..	1	..	1	1	..	..	..	7
Skin, of the	14	15	10	6	2	2	2	2	..	1	3	3	..	60
Surgical	95	102	71	43	5	13	15	6	8	12	4	2	1	377
Tonsillitis	54	104	42	29	9	4	5	5	7	2	14	5	..	280
Typhoid	2	4	1	..	..	1	..	..	..	..	..	..	..	8
Totals	1023	1313	714	429	115	107	141	81	66	84	89	61	9	4232
No. of Students	556	630	425	325	137	114	149	80	85	120	738	387	52	
% of "Sign-offs"	184	208	168	132	84	94	95	101	78	70	12	17	17	

STILLMAN INFIRMARY

LIST OF CASES, 1903–04

Abscess	11
Appendicitis	19
Arthritis — knee	1
Bronchitis	15
Carbuncle — neck	1
Concussion — cerebral	1
Cystitis	1
Electric shock	1
Epididymitis	5
Erysipelas complicated by pneumonia	1
Fissure in ano	2
Fracture — Colles	1
" of fibula	1
" of nose	2
" of radius and ulna	1
" of toe	1
Hematoma	1
Hemorrhage from nose	1
Hemorrhoids	2
Herpes Zoster	1
Hiccough	1
Insomnia	1
Jaundice	10
La Grippe	55
Lymphangitis	1
Malaria	2
Miscellaneous Medical	32
" Surgical	22
Otitis Media	2
Pharyngitis	3
Phimosis	2
Pleuritis with effusion	1
Pneumonia	5
Pyaemia	1
Rheumatism	11
Sprained ankle	3
" knee	1
Stricture of urethra	1
Synovitis — knee	2
Tonsillitis	53
Torticollis	1
Typhoid Fever	2
Wound — septic — of leg	1
" puncture — of thigh	1
" gunshot—index finger	1
No diagnosis	6
Total	290

Room patients	117
Ward patients	173
Total	290

Discharged — well	173
" relieved	106
" not relieved	1
" transferred	6
Died	4
Total	290

Total number of hospital days	1805
Daily average	6.58

INCOME FOR UNIVERSITY, COLLEGE, LAWRENCE SCIENTIFIC SCHOOL, AND LIBRARY ACCOUNTS FROM STUDENTS, AND FROM INVESTMENTS, IN 1831–32, 1871–72, AND 1903–04.

FROM STUDENTS.

	1831–32	1871–72	1903–04
For Instruction	....	$95,067.05	$460,692.88
Rents	....	19,309.00	75,922.28
Special repairs	....	818.55	....
Diplomas	....	280.00	....
Gymnasium Fees	....	....	3,478.00
Examination "	....	....	5,095.00
Graduation "	....	....	9,320.00
Laboratory "	....	....	28,097.70
A.M. Degree "	....	771.00	....
A.B. " " (out of course)	....	12.50	....
All items	$22,645.60	....	....
Stillman Infirmary Fees	....	....	6,588.76
Summer Camp, Squam Lake, Fees and Expenses	....	....	10,086.40
	$22,645.60	$116,258.10	$599,280.92

FROM INVESTMENTS.

[*Excluding gifts, sales, and income for museums.*]

	1831–32	1871–72	1903–04
For University Account, including, in 1903–04, Retiring Allowance Fund income, $17,478.09	....	$22,201.00	$72,268.42
University, College and Library	$17,746.00	....	....
College salaries and expenses, including Appleton Chapel	....	47,930.68	99,740.94
Jefferson Physical Laboratory	....	....	3,681.39
Botanic Garden, including use of house	549.66	3,359.50	5,105.67
Gray Herbarium	....	1,030.07	4,243.22
Phillips Brooks House	....	....	1,318.95
Stillman Infirmary	....	....	3.937.17
Fellowships and Scholarships	155.00	24,565.18	76,567.41
Beneficiary	851.00	1,469.25	29,387.22
Prizes	348.97	2,242.65	8,275.89
Special purposes (see p. 70, Treasurer's Statement for 1903–04)	....	....	18,651.86
Library — Books	300.00	8,236.06	20,297.35
Publications	....	....	366.48
Administration	....	....	29,608.79
	$19,950.63	$111,034.39	$378,450.76

FUND OF THE CLASS OF 1856.

"BOSTON, January 21, 1904.

"TO THE PRESIDENT AND FELLOWS
OF HARVARD COLLEGE.

"GENTLEMEN: —

"The Class of 1856 desires to transfer to you its Class Fund now amounting to $7,500, to be held as the property of Harvard College on the following terms: —

"*First:* A separate account shall be kept by the Treasurer of the College with 'The Fund of the Class of 1856,' which account shall be credited with the sum above-named and with such other sums as may be added thereto from time to time by said Class or by any other person, in amounts of not less than one hundred dollars. Upon the death of the last surviving member of the said Class the above-named account shall be closed and the amount then credited thereto including accumulated income shall be transferred to the account of the Class Subscription Fund, the income of which is devoted to the general purposes of the College.

"*Second:* Until said account shall be closed as above provided, the amount standing to the credit of its capital account shall be invested at the discretion of the President and Fellows and share with other funds in the 'General Investments' of the College.

"*Third:* The income received for the Fund of the Class of 1856 shall be credited annually to the account of said Fund, and the amount of income so credited shall be payable on demand to the Secretary of the Class whose receipt therefore shall be full discharge to the President and Fellows for all sums paid to him. The Class Secretary shall not call for money oftener than once a year unless with the consent of the Treasurer of the College. All income not so called for within the fiscal year of the College following the date of its credit to the Class, shall be credited to, and become a part of, the principal of said Fund at the end of such year. If at any time there shall be no Secretary of the Class of 1856, the Treasurer may in his discretion pay the income to any member or members of the Class of 1856, whose receipt therefor shall be a full discharge to the President and Fellows, who shall have no responsibility for the application of the money.

(Signed) DAN. A. GLEASON,
Class Secretary.

CHS. E. VAUGHAN,
DAVID P. KIMBALL,
Class Committee."

OCCUPATIONS OF STUDENTS' FATHERS: WAGE EARNERS.

COLLEGE.

Accountant or Book-keeper	24
Agent	7
Baker	1
Broom Maker	1
Carpenter	16
Clerk, Secretary, or Stenographer	52
Cook	1
Cooper	2
Court Officer	1
Dyer	1
Engineer and Fireman	9
Flax Spinner	1
Foreman, Manager, or Superintendent	15
Hackman	1
Iron Moulder	1
Knitter	1
Laborer	5
Letter Carrier	6
Lumberman	1
Machinist	10
Mason, Stone Polisher, or Marble Cutter	7
Mechanic	5
Mill Employee	2
Millwright	1
Miner	3
Painter	3
Paper Hanger	1
Policeman	2
Printer	9
Railroad Employee	12
Salesman	34
Shoe Cutter, etc.	3
Soldier (Swedish Army)	1
Steam Fitter	1
Tailor	6
Teamster	2
Tinsmith	1
Wagon Maker	1
Watch Maker	1
Watchman	2
	253

LAWRENCE SCIENTIFIC SCHOOL.

Accountant or Auditor	3
Agent	4
Book-keeper	4
Buyer	2
Carpenter	4
Chemist	1
Engineer	1
Foreman or Superintendent	4
Gardener	3
Government Employee	4
Iron Moulder	1
Janitor	2
Laborer	1
Mill Employee	1
Millwright	1
Paper Hanger	1
Plumber	2
Policeman	1
Railroad Employee	4
Sailmaker	1
Salesman	4
Secretary	2
Stonecutter	1
Tailor	1
Teamster	1
Teller	1
Theatre Employee	1
Treasurer	2
Water Department	1
Woodworker (Machine)	1
	60

REPORT OF THE SECRETARY FOR APPOINTMENTS

[*The Secretary for Appointments is at the service of graduates and students of the University seeking employment of any sort, and of all persons offering employment suitable for graduates or students of the University.*]

To the President of the University: —

Sir, — I have the honor to submit a report on the work of the Appointments Office for the year ending October 1, 1904.

The number of persons registered with the Office is 2,419. By far the greater part of these are registered for positions as teachers. It is apparently the impression of most of our graduates who know anything of the Appointments Office that its sole function is to try to provide places for those of our men who wish to teach. Indeed, this is the side of the work that has been most strongly developed; but of late there has been an increasing call on the Office for men — especially for men trained in applied science — for permanent and for temporary positions in business. Of the number of men registered with the Office, not more than one-third are actively on our lists. It has been impossible with the present force of the Office to keep track of the men registered; and this inability to keep on our working lists the names of all the men registered with us is very much to be regretted; for by thus reducing the number of men available for new positions or for promotion the efficiency of the Office is correspondingly reduced. It is to be hoped that this drawback may soon in some way be remedied; for under the present arrangement we are able to do no more than keep up after a fashion from day to day with what seems an ever increasing and, I believe, a healthy growth of the work of the Office.

The figures in the following tables of positions filled make no distinction as to whether the positions were secured

(1) by applications from schools or teachers made direct to the Office;
(2) by applications from schools or teachers made to Departments of the University, or to individual members of the Departments;
(3) by applications from Teachers' Agencies or Business Agencies to the Office;
(4) by requests from candidates, who have heard of positions, for recommendations of the Office; or,
(5) by requests from teachers, or schools, for recommendations of the Office for candidates who have applied for positions.

It has seemed useless to separate the positions filled into the categories given above. The direct method of application, represented in categories 1 and 2, results in securing a greater percentage of positions (compared with the number of inquiries) than any of the less direct methods of application. It has not been possible to gather accurate statistics of positions secured as a result of the indirect method of application represented in category 3. It is also quite impossible to tell how many of the positions secured through requested recommendations, represented in categories 4 and 5, would have been secured without the influence of the Office.

The following table shows the number of strictly teaching positions filled, report of which has been made to the office. Of these there were 130: —

TEACHING POSITIONS

University or College	49	Academies (so called)	13
University Extension Lecturer	1	Normal Schools	6
Technical Schools	4	Tutors for one year	14
Private or Endowed Schools	25	Companions for one year	3
Public High Schools	14	Total	129

The following table shows the number of Administrative positions filled. Of these there were 16: —

ADMINISTRATIVE POSITIONS (EDUCATIONAL)

President of University	1
Superintendent of Schools	3
Principal of Public or Endowed Schools and Academies	10
Assistant or Sub-Principal	2
Total	16

The following table shows the number of business positions of a permanent nature filled. Of these there were 22: —

BUSINESS POSITIONS

Banking Houses	2
Clothing (wholesale) Houses	2
Manufacturing concerns	5
Philippine service (Department of Weights and Measures)	1
Publishing Houses	4
Secretaries	4
Telephone Companies	4
Total	22
Total number of permanent positions filled	167

The table of teaching positions seems to show that colleges, private and endowed schools, and academies have heretofore made more use of the Office than public schools.

The following table shows the geographical distribution of the permanent positions filled: —

	Private or Endowed Schools.	Public Schools.	Academies.	Military Academies.	Normal Schools.	Colleges or Universities.	Scientific or Tech. Schools.	Superintendent of Schools.	Principals or Sub-Principals.	Tutors.	Companions.	Business Positions.	President of University.
Bahama	..	..	..	..	..	..	..	..	..	..	1	..	..
California	2	..	..	..	..	3	..	..	..	..	1	..	..
Connecticut	2	1	..	..	1	2	1	..	1	..	..	..	..
District of Columbia	1	..	..	..	..	..	..	..	..	1	..	..	..
Florida	..	..	..	..	..	..	..	..	..	1	..	..	..
Hawaii	..	..	..	..	..	..	..	..	1	..	..	..	..
Illinois	5	..	1	..	1	4	..	..	..	..	..	..	..
Kansas	..	..	..	..	..	1	..	..	..	..	..	..	..
Kentucky	..	1	1	..	..	1	..	..	..	..	..	..	..
Maine	..	..	..	..	..	3	..	..	1	..	..	..	..
Maryland	1	..	..	1	..	..	..	..	..	..	..	3	..
Massachusetts	5	6	4	..	1	12	3	3	6	2	..	7	..
Michigan	2	..	..	..	..	1	..	..	..	..	..	1	..
Mississippi	..	..	..	..	..	1	..	..	..	..	..	..	..
Missouri	..	1	1	1	..	2	..	..	..	..	..	2	..
New Hampshire	1	..	2	..	..	..	..	..	1	..	..	..	..
New Jersey	3	1	..	..	..	..	..	..	1	..	..	1	..
New York	2	1	1	1	1	4	..	..	..	1	..	7	..
North Carolina	..	..	..	..	..	1	..	..	..	..	..	..	..
Ohio	1	1	..	..	..	1	..	..	..	..	..	..	..
Pennsylvania	..	..	..	..	2	*6	..	..	1	1	..	..	..
Philippine Islands	..	..	..	..	..	..	..	..	..	..	..	1	..
South Carolina	..	..	..	..	..	..	..	..	..	1	..	..	..
Texas	..	1	..	..	..	..	..	..	..	..	..	..	..
Utah	..	1	..	..	..	..	..	..	..	..	..	..	..
Vermont	..	..	..	..	..	1	..	..	..	..	..	..	..
Virginia	..	..	..	..	..	1	..	..	..	..	..	..	..
Wisconsin	..	..	..	..	..	4	..	..	..	..	..	..	..
Wyoming	..	..	..	..	..	..	..	..	..	..	..	..	1
Europe	..	..	..	..	..	1	..	..	..	7	1	..	..
Totals	25	14	10	3	6	49	4	3	12	14	3	22	1

* Lecturer.

This table shows the demands on various Departments of the University for teachers in single subjects: —

Classics	11
English	16
German	4
Romance Languages	16
History	7
Economics	1
Philosophy	2
Education	2
Mathematics	5
General Science	4
Natural Science	1
Physics	4
Chemistry	5
Biology	4
Zoölogy	1
Geology	2
Mineralogy	1
Physiography	1
Total	87

This table shows the number of men supplied to teach combined subjects: —

Classics, Ancient History	1
Classics, English, Athletics, Gymnastics	1
Classics, English, Mathematics	1
Latin, English, German, History	1
English, History	1
English, Education	1
English, French	1
English, Geography	1
German, French	3
German, French, Spanish	1
French, Latin	1
History, Government	1
Mathematics, General Science	1
Mathematics, Mechanical Drawing	1
Physics, Mathematics	1
Physics, Chemistry	3
Physics, Natural Science	2
Biology, Physics	1
Physiography, General Science	1
Total	24
Grand total	111

The list on the next page shows the ways in which men have earned money during vacation and term-time. The records of temporary work are incomplete, but the men enumerated are known to have been employed. It is impossible to estimate the amount of money earned in temporary work: —

TEMPORARY

Boatman	1
Bookkeeper	2
Canvassing	25
Canvassing Agent	1
Caretaker (house)	3
Clerk	69
Distributing pamphlet	1
Driver (horse)	1
Engrosser	1
Farmer	1
Farm (salesman of produce)	3
Furnace care	2
Guard (Mrs. Gardner's Museum)	12
Guide (aside from authorized)	2
Hotel Bell-man	5
" Clerk	1
" Entertainer	1
" Night-watchman	1
House (general help)	1
Lawn mower	1
Library attendant	1
Manuscript corrector	1
Marketman	5
Monitor (Law School Exam.)	7
Musician	3
Printer	1
Proctor — distributing diplomas	1
Reader aloud (in courses)	2
St. Louis Fair (chair-roller)	5
Salesman (Harvard Coöperative)	13
Secretary to Professor	3
Settlement work	1
Singer (church)	2
Skating-rink (evenings)	1
Stadium (numbering seats)	10
Stenographer	7
Summer Camp	4
Ticket-collector	3
Tutor (family for summer)	13
Tutor (special subjects)	44
Typewriter	4
Usher	4
Waiter	8

No sufficiently accurate record has been kept of the salaries to be of much value in making statistics. The records we have show a very wide range of salary; they seem to show that private and endowed schools pay the best salaries; and that public schools, especially to teachers without experience, pay better than colleges. The salaries of ninety positions, teaching and administrative, of which we have record, aggregate roughly one hundred thousand dollars ($100,000).

The records of places filled, as given in the tables above, do not include all the positions secured through the influence of the Office. What per cent. they do include is hard to tell. Few men think to inform the Office of positions they have secured. To almost every recommendation that was made by the Office direct to schools and teachers, an inquiry had later to be made to find out whether any of the candidates recommended were accepted. In the case of indirect recommendations — made to agencies for places about which the Office had only general information — no inquiry was made; and the Office has therefore record only of such places thus secured as by chance, or thoughtfulness of the successful applicant, came to its notice. The largest number of recommendations were made in this indirect way: and hereafter it will be the business of the Office to find out, if possible, how many of the men thus indirectly recommended succeeded in securing positions.

HENRY S. THOMPSON,
Secretary for Appointments.

ORDINARY DEGREES CONFERRED IN 1900–04.

	1900.	1901.	1902.	1903.	1904.
Bachelors of Arts	404	457	422	511	459
Bachelors of Arts out of course	15	26	32	42	38
Bachelors of Science	59	75	76	101	77
Bachelors of Science out of course	6	4	7	5	7
Bachelors of Divinity	5	2	5	4	7
Bachelors of Divinity out of course	0	0	1	1	1
Bachelors of Laws	126	136	146	157	169
Bachelors of Laws out of course	8	9	16	6	13
Bachelors of Agricultural Science	0	2	5	6	3
Doctors of Medicine	130	116	130	109	131
Doctors of Medicine out of course	0	4	1	3	4
Doctors of Dental Medicine	33	29	32	27	25
Doctors of Veterinary Medicine	7	6	0	0	0
Doctors of Veterinary Medicine out of course	0	1	1	0	0
Masters of Arts	125	119	110	117	157
Masters of Arts out of course	9	6	10	8	5
Masters of Science	1	7	8	6	2
Masters of Science out of course	0	3	0	1	0
Doctors of Philosophy	35	29	28	28	46
Doctors of Science	1	0	3	1	1
Totals	964	1031	1033	1133	1145

PUBLICATIONS OF THE MUSEUM OF COMPARATIVE ZOÖLOGY FOR THE ACADEMIC YEAR 1903–04.

Bulletin: —

Vol. XXXIX.

No. 8. Some Fishes from Australasia. By SAMUEL GARMAN. 15 pp. 5 Plates. August, 1903.

No. 9. Medusæ from the Maldive Islands. By HENRY B. BIGELOW. 27 pp. 9 Plates. April, 1904.

Vol. XL.

No. 7. Contributions from the Zoölogical Laboratory. No. 145. The Changes which occur in the Muscles of a Beetle, Thymalus marginicollis Chevr., during Metamorphosis. By ROBERT S. BREED. 68 pp. 7 Plates. October, 1903.

Vol. XLI.

No. 2. The Chimæroids (Chismopnea Raf., 1815: Holocephala Müll., 1834), especially Rhinochimæra and its Allies. By SAMUEL GARMAN. 30 pp. 15 Plates. March, 1904.

Vol. XLII.

No. 3. The Mountain Ranges of the Great Basin. By W. M. DAVIS. 51 pp. 7 Plates. September, 1903.

No. 4. Postglacial and Interglacial (?) Changes of Level at Cape Ann, Massachusetts. By R. S. TARR. With a note on the elevated Beaches. By J. B. WOODWORTH. 18 pp. 13 Plates. September, 1903.

No. 5. The Hurricane Fault in the Toquerville District, Utah. By ELLSWORTH HUNTINGTON and JAMES WALTER GOLDTHWAIT. 63 pp. 7 Plates. February, 1904.

Vol. XLIII.

No. 1. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in Charge of Alexander Agassiz, carried on by the U. S. Fish Commission Steamer "Albatross," during 1891, Lieut. Commander Z. L. Tanner, U. S. N., Commanding. XXIX. Reports on the Scientific Results of the Expedition to the Tropical Pacific, 1899–1900. VI. Reports on the Cephalopoda. By WILLIAM E. HOYLE. 71 pp. 12 Plates. March, 1904.

Vol. XLIV.

The Stone Reefs of Brazil, their Geological and Geographical Relations, with a Chapter on the Coral Reefs. By JOHN CASPER BRANNER. 285 pp. 91 Plates. May, 1904.

Vol. XLV.

No. 1. Contributions from the Zoölogical Laboratory. No. 148. The Anatomy of Hemiurus crenatus (Rud.) Lühe, an appendiculate Trematode. By CLARENCE H. LANDER. 28 pp. 4 Plates. January, 1904.

No. 2. Contributions from the Zoölogical Laboratory. No. 150. The Development of the Mesonephros and the Müllerian Ducts in Amphibia. By ROBERT W. HALL. 97 pp. 8 Plates. June, 1904.

No. 3. Contributions from the Zoölogical Laboratory. No. 153. The Optic Reflex Apparatus of Vertebrates for Short-circuit Transmission of Motor Reflexes through Reissner's Fibre; its Morphology, Ontogeny, Phylogeny, and Function. — Part I. The Fish-like Vertebrates. By PORTER EDWARD SARGENT. 132 pp. 11 Plates. July, 1904.

Vol. XLVI.

No. 1. Descriptions of Bolca Fishes. By C. R. EASTMAN. 36 pp. 2 Plates. June, 1904.

Memoirs: —

Vol. XXIX.

The Coral Reefs of the Maldives. By ALEXANDER AGASSIZ. 25, 168 pp. 82 Plates. December, 1903.

Vol. XXX.

No. 1. Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in Charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross," during 1891, Lieut. Commander Z. L. Tanner, U. S. N., Commanding. XXX. The Sponges. By H. V. WILSON. 164 pp. 26 Plates. July, 1904.

Report: —

1902–03. 35 pp. December, 1903.

INDEX.

PAGE

- Appointments 324–336
- APPOINTMENTS OFFICE, Report on 48, 348
- Archaeology and Ethnology, field work 36
- ARNOLD ARBORETUM, Report on 245
- ARTS AND SCIENCES, FACULTY OF, Report on 53
  - Appointments 324
  - Bachelor of Arts, degree of, with distinction 95
  - Committee on Improving Instruction 94
  - Courses of instruction in 1903–04 53–82
  - Instruction in 1904–05 88
  - Large elementary courses 13, 87
  - Summer courses 83
- Association of American Universities 164
- ATHLETIC SPORTS, Report on 118
  - Committee on Regulation of 118, 122, 336
  - Finances 125
  - Gate money 127
  - Grand-stand desired 119
  - Gun Club 121
  - Intercollegiate relations 123
  - Play-grounds 118
  - Records compiled 123
  - Soldier's Field improvements 121
  - Stadium 45, 119, 126
- Austin Hall, proposed addition to 9, 25, 181
- Bachelor of Arts, degree of 93
  - Degree of, with distinction 95
- Berlin, University of 165
- Bermuda Biological Station 283
- Bingham, Hiram, Jr. 211
- BOTANIC GARDEN, Report on 41, 241
  - Cuban Experiment Station 41, 242
  - Pests 241
- Buildings, Committee on erection of 8
- BUSSEY INSTITUTION, Report on 208
  - Appointments 335
- Cercle Français Fellowship 44
- CHEMICAL LABORATORY, Report on 42, 247
  - Boylston Hall, crowded condition of 42, 252
  - Publications 251
- Class Funds 48
- Class of 1856 Fund 49, 346
- College Entrance Examination Board 12, 90
- Committee on Improving Instruction 12, 94
- Comparative Pathology, Laboratory of 27, 192
- Coolidge, A. C. 211, 214
- Crocker, George 32, 295
- Crocker Summer Mining School 32, 295
- Cuban Experiment Station 41, 242
- Cuban Summer School (1900) 34
- Dane Hall 46

PAGE

- Deaths . . . 5, 99, 117, 130, 264, 300, 323
- Degrees conferred in 1902–1904 . . . 353
  - Conferred in March . . . 8, 100
  - Mining Engineer and Metallurgical Engineer . . . 7, 93, 294
- Dental School, Report on . . . 27, 204
  - Appointments . . . 334
  - Courses in the Medical School . . . 206
  - Courses of instruction . . . 204
  - Emergency Corps . . . 207
  - Fillebrown, Thomas, resignation of . . . 7, 206
  - Finances . . . 27, 207
  - Gifts . . . 27, 207
  - Infirmary . . . 205
  - Mechanical Dentistry . . . 206
  - Operative Department . . . 205
  - Registration statistics . . . 204
- Dexter Lectureship . . . 24
- Divinity Hall, assignment of rooms in . . . 170
  - Improvements in . . . 170
- Divinity School, Report on . . . 24, 167
  - Billings Prizes for Improvement in Pulpit Delivery . . . 171
  - Chapel improvements . . . 24, 170
  - Colleges and seminaries whence students came . . . 171, 172
  - Courses of instruction . . . 167, 173
  - Denominations represented in the student body . . . 169
  - Divinity students taking courses in Arts and Sciences . . . 169
  - Non-Divinity students taking courses offered by the Divinity School . . . 170
  - Registration statistics . . . 167, 168, 171
  - Special Students . . . 34
  - Summer School of Theology . . . 24, 36, 173, 176, 341
  - Theological Review to be established . . . 170
- Doctors of Philosophy, occupations of . . . 23, 152
- Eddy, Mrs. I. W. . . . 264
- Eliot, Charles W. . . . 97
- Endowment, proposed objects for . . . 52
- Engineering Camp . . . 30, 87, 258
- Engineering, Division of, Report on . . . 30, 257
  - Publications . . . 30
  - Summer Camp at Squam Lake . . . 30, 87, 258
- Everett, Mildred . . . 170
- Examination Proctors . . . 330
- Fathers of students, occupations of . . . 18, 347
- Fees paid in advance . . . 10
- Fillebrown, Thomas, resignation of . . . 7, 206
- Finances . . . 49–52
- Fogg Art Museum, Report on . . . 42, 309
  - Committee on the Museum . . . 336
- Foot-ball . . . 18–22, 124
- Forestry . . . 87
- Geological field work . . . 35, 285
- Geology and Geography, Department of, Report on . . . 285
  - Turkestan expedition . . . 287
  - Publications . . . 290
- Germanic Museum, Report on . . . 43, 313
- Graduate School, Report on . . . 22, 128
  - Administrative Board . . . 128
  - Age of students . . . 154

PAGE
Graduate School. — Concluded.
  Bachelor of Arts, degree of 93, 165
  Birthplaces of students 23, 146
  Colleges and Universities whence students came 138, 144
  Death 130
  Distribution of students in the several fields of study 132
  Doctors of Philosophy 23, 150
  Fellowships and scholarships 155, 161, 164
  Gains and losses in numbers 22
  Instructorships, Teaching Fellowships, and Assistantships 163
  Master of Arts, degree of 165
  Non-Harvard graduates 23, 148
  Number and classification of students 128
  Number of courses taken by students 23
  Number of elections of courses and half-courses 134
  Percentage of Bachelor's degrees of different kinds 143
  Percentage of students in their first and following years 136
  Percentage of students from other colleges 142
  Recommendations for degrees 147
  Resident students doing full work 133
Gray Herbarium, Report on 236
Green, John O., resignation of 6
Hancock Professorship 24
Harvard Club of Louisiana 164
Harvard College, Report on 15, 99
  Administrative Board 108
  Admission examination statistics 101
  "Continuous residence" 109
  "Cutting" 109
  Deaths 99
  Degrees conferred in March 100
  Discipline 108
  Endowment for 51
  Graduation statistics, 1904 99
  Lawrence Scientific School, transfer of students to and from . . . 34, 107
  Losses and gains of classes 100
  Master of Arts, degree of 93
  Occupations of students' fathers 18, 347
  Registration statistics 99
  "Regulations for students in Harvard College" 108
  Scholarships holders 110
  "Signing off" 112
  Special Students 34, 92
Harvard Coöperative Society 46
Harvard Dining Association 47
Hill, Adams S., resignation of 6
Hills, William B., resignation of 7
Hoar, George F. 5, 300
Hoar, Samuel 5
Hohenzollern Collection 216, 314
Hollis Hall, improvements in 14
Hyde, James H. 44, 211
Illness report 343, 344
Income from funds compared with receipts from students 345
Instruction in large elementary courses 13, 87
Jefferson Physical Laboratory, Report on 254
Laboratory fees raised 11

PAGE

- LAW SCHOOL, Report on . . . 25, 177
  - Appointments . . . 331
  - Austin Hall, addition to . . . 9, 25, 181
  - Courses of instruction . . . 178
  - Portraits of Professor J. B. Thayer and Professor J. B. Ames . . . 180
  - Proportion of college graduates in the School . . . 180
  - Registration statistics . . . 177
  - Salaries of professors . . . 26
  - Special Students . . . 33
- LAWRENCE SCIENTIFIC SCHOOL, Report on . . . 115
  - Administrative Board . . . 327
  - Admission requirements . . . 16
  - Deaths . . . 117
  - Discipline . . . 117
  - General Science course . . . 17, 91
  - Harvard College, transfer of students to and from . . . 34
  - Loss of students . . . 116
  - Occupations of students' fathers . . . 18, 347
  - Registration statistics . . . 115
  - "Signing off" . . . 114, 117
  - Special Students . . . 16, 34, 116
- Lee, Elliot C. . . . 243
- LIBRARY, Report on . . . 28, 209
  - Accessions . . . 28, 213
  - Admission to the book-stack . . . 223
  - Archives . . . 235
  - Bibliographical Contributions . . . 212
  - Catalogue Department . . . 227
  - "Curators" of special departments . . . 212
  - Finances . . . 211, 231
  - Gifts . . . 214–218
  - Gore Hall, proposed enlargement of . . . 28
  - Harvard Collection . . . 235
  - Hohenzollern Collection . . . 216
  - von Maurer, Konrad, library of . . . 214
  - Need of a new building, and endowment . . . 209
  - New building, necessary accommodations in . . . 28, 221
  - Open reading-room collections . . . 222
  - Ordering Department . . . 29. 231
  - Printed cards, use of . . . 231
  - Shelf Department . . . 224
  - Special reference libraries . . . 219
  - Sunday use of reading-room . . . 224
  - Turin Library, gift to . . . 212
  - Use of books in the College Library . . . 221
- McKim, Charles F. . . . 164
- Malingering . . . 15, 112, 114, 117
- Mallinckrodt, Edward . . . 248
- Massachusetts Institute of Technology, proposed alliance with . . . 9
- Master of Arts, degree of . . . 92, 93
- von Maurer, Konrad, library of . . . 214
- MEDICAL SCHOOL, Report on . . . 26, 184
  - Administrative Board . . . 184
  - Anatomy . . . 184
  - Appointments . . . 331
  - Bacteriology . . . 187
  - Building . . . 184

PAGE

MEDICAL SCHOOL. — Concluded.
  Comparative Pathology 192
    Laboratory of 27
  Courses of instruction 197
  Degree requirement for admission 203
  Examination statistics 200
  Experimental Pharmacology and Therapeutics 189
  Histology and Embryology 186
  Hygiene 195
  Museum 195
  Pathology 189
  Physiological and Pathological Chemistry 188
  Physiology 185
  Registration statistics 199
  Scholarships and Fellowships 196
  Summer courses 35
  Surgery 192
MEDICAL VISITOR'S REPORT 15, 343, 344
MEDICINE, FACULTY OF, Report on 182
  Oliver Scholarship founded 182
  Recommendations for degrees 183
Metallurgical Engineer, degree of 7, 93, 294
MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY, Report on 42, 298
Mining Engineer, degree of 7, 93, 294
MINING AND METALLURGY, DEPARTMENT OF, Report on 31, 292
  Crocker Summer School 32, 295
  Publications 297
MUSEUM OF COMPARATIVE ZOÖLOGY, Report on 276
  Publications 353
MUSEUM OF FINE ARTS, TRUSTEES OF 337
Nash, Nathaniel C. 41, 243
National Educational Association 34
OBSERVATORY, Report on 264
  Anonymous Gift of 1902 271
  Appointments 335
  Blue Hill Meteorological Observatory 270
  Boyden Department 269
  Bruce photographic telescope 269
  Carnegie Institution appropriation 271
  Colorado Station 273
  Common Telescope 265
  Deaths 264
  Draper Memorial 268
  East Equatorial 265
  International Coöperation in Astronomy 264
  Library 273
  Meridian Circle 266
  Meridian Photometer, 12-inch 266
  Needs 272
  Publications 274
  St. Louis Exposition 273
  Telegraphic announcements 273
Occupations of students' fathers 18, 347
Oliver, Joseph P. 182
Ordinary degrees conferred, 1900–04 353
Overseers, Board of, resolutions from 8, 51

PAGE
Paris, University of, Fellowship at 44
Peabody Museum of American Archaeology and Ethnology,
  Report on 300
  Gifts 304
Peters, Edward D. 296
Pew rents in Cambridge churches 47
Play-grounds 118
Porto Rican Summer School, Report on 34, 36–41, 337
  Concurrent Resolution of Congress providing transportation 340
  Excursions 40, 338
  Finances 36, 340
  Lease form for lodgings 339
  Officers of Instruction and Management 337
  Text-books used 338
Potter, William H. 207
Preachers to the University 336
President's Birthday 97
Proctors 330
Psychological Laboratory, Report on 261
Radcliffe College, Report on 319
  Academic Board 320
  Admission examination statistics 320
  Graduate Students 320
  Greenleaf estate 321
  Radcliffe College Auxiliary 321
  Registration statistics 319
  Whitman, Sarah W., death of 321
Resignations 6, 323
Rockefeller, John D. 26
Salaries 51
Sanger, Charles R. 247
Semitic Museum, Report on 307
"Signing off" 14, 112, 117
Smith, Theobald 27
Soldier's Field 46
Special Students 33, 92
Squam Lake Camp 30, 87, 258
Stadium 45, 119, 126
State Board of Health 27, 192
Statutes amended 7
Stillman Infirmary 45, 342
Stoughton Hall, improvements in 14
Strobel, Edward H. 25
Summer Field Work in Geology 285
Summer School of Arts and Sciences 34, 83
Summer School of Theology 24, 36, 172, 176, 341
Summer Work, increase of 34
Tuition-Fees, paid in advance 10
  Suggested increase of 51
Turin, National Library of 212
Veterinary School 7
Westengard, Jens I. 25
Whitman, Sarah W. 321
Winlock, Anna 264
Zoölogical Laboratory, Report on 278
  Publications 283

TREASURER'S STATEMENT

SIGILLVM ACADEMIAE HARVARDIANAE IN NOV ANG
CHRISTO ET ECCLESIAE
VE RI TAS

1904

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College: —

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending July 31, 1904, in the usual form.

The Funds separately invested, with the income thereof, are as follows: —

UNIVERSITY.	Principal, July 31, 1904.	Income.
George B. Dorr,		
University Houses and Lands,	$115,966.56	$4,927.20
George Draper,		
University Houses and Lands,	48,458.50	2,058.91
John C. Gray,		
University Houses and Lands,	25,000.00	1,062.20
Walter Hastings,		
Real Estate, Sacramento St., Cambridge,	20,000.00	1,214.51
Insurance and Guaranty,		
University Houses and Lands,	57,142.17	3,734.08
Real Estate, Lucas St., Boston,	4,000.00	
Joseph Lee,		
University Houses and Lands,	10,000.00	424.88
Henry S. Nourse (part),		
32 shares American Sugar Refining Co.,	3,936.00	112.00
25 " Brookside Mills,	2,500.00	87.50
30 " Lanett Cotton Mills,	3,000.00	90.00
40 " Missouri Zinc Fields Co.,	120.00	
80 " The National Land & Improvement Co. of Colorado,	1.00	
21 " Pennsylvania Steel Co., preferred,	1,260.00	73.50
3 " " " " common,	3.00	
15 " Western Tel. & Tel. Co., preferred,	1,320.00	
45 " " " " " " common,	540.00	
25 " United States Steel Corporation, preferred (sold during year),		43.75
Mortgage Notes,	13,900.00	410.78
Fairbanks Estate (sold during year),		10.00
Francis E. Parker,		
University Houses and Lands,	113,817.44	4,835.89
Amounts carried forward,	$420,964.67	$19,085.20

Amounts brought forward, ...	$420,964.67	$19,085.20
Riverside Fund,		
6 shares Harvard Riverside Associates, ...	6,000.00	
Henry Villard (part),		
University Houses and Lands, ...	48,952.37	773.68
William F. Weld,		
University Houses and Lands, ...	100,000.00	4.248.81

COLLEGE.

T. Jefferson Coolidge, for Research in Physics,		
625 shares Massachusetts Electric Companies, pref.,	57,500.00	2,500.00
Eaton Professorship of the Science of Government,		
Mortgages on real estate in New York City, . . .	84,000.00	3,946.87
Arthur T. Lyman Fund,		
Note of Boston Manufacturing Co., ...	25,000.00	
Charles Eliot Norton Fellowship,		
$15,000 Northern Pacific–Great Northern Joint 4's (C. B. & Q. collateral) of 1921, ...	14,100.00	600.00
George Foster Peabody Scholarship,		
$6,000 Mexican Coal & Coke Co. 1st M., S. F. 5's of 1926, ...	4,800.00	300.00
Jonathan Phillips's Gift,		
$10,000 City of Boston 3½'s of 1920, ...	10,000.00	350.00
Professorship of Hygiene (part),		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
$16,000 Northern Pacific–Great Northern Joint 4's (C. B. & Q. collateral) of 1921, ...	15,681.85	640.00
Scholarship of the **Class of 1883,**		
$5,000 Brookline Gas Light Co. Gen'l M. 5's of 1913,	5,000.00	250.00
Dunlap Smith Scholarship,		
$5,000 Metropolitan West Side Elevated R. R. Extension M. 4's of 1938, ...	4,700.00	200.00
Stoughton Scholarship (part),		
Real Estate in Dorchester, ...	1,294.30	100.00
Wales Professorship of Sanskrit,		
Real Estate, Cornhill, Boston, ...	40,000.00	1,675.50
Samuel Ward's Gift (part),		
Ward's (Bumkin) Island, Boston Harbor, . . .	1.00	
David Ames Wells (part),		
Real Estate in Brooklyn, New York, ...	2,500.00	177.16
11 shares Walter A. Wood M. & R. Machine Co., .	550.00	

LIBRARY.

Ichabod Tucker (part),		
Policy of Mass. Hospital Life Insurance Co., . . .	5,000.00	200.00

LAW SCHOOL.

James Barr Ames Prize (part),		
Personal Note, ...	2,250.00	100.00
Amounts carried forward, ...	$853,294.19	$35,347.22

Amounts brought forward, ...	$853,294.19	$35,347.22

MEDICAL SCHOOL.

Calvin and Lucy Ellis (part),		
40,000 Northern Pacific–Great Northern Joint 4's (C. B. & Q. collateral) of 1921, ...	26,585.00	1,600.00
Real Estate in Boston, ...	22,500.00	311.36
Real Estate in Eden, Bar Harbor, Maine, ...	10,000.00	
George C. Shattuck (part),		
$25,000 Kansas City, Fort Scott & Memphis R. R. Cons. M. 6's of 1928 ($203.70 deducted from income for sinking premium), ...	29,888.90	1,296.30

OBSERVATORY.

Advancement of Astronomical Science (1902) (part),		
15 shares Calumet & Hecla Mining Co., ...	9,000.00	600.00
Mortgage Note, ...	3,000.00	180.00
5,000 Northern Pacific–Great Northern Joint 4's (C. B. & Q. collateral) of 1921, ...	4,800.00	200.00

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

Peabody Building (part),	$54,000 Kansas & Missouri R. R. 1st M. 5's of 1922,	11,512.72	622.32
Peabody Collection (part),		19,218.64	1,038.84
Peabody Professor (part),		19,218.64	1,038.84
Thaw (part) ($8.48 deducted from income for sinking premium),			
$20,000 Girard Point Storage Co. 1st M. 3½'s of 1940,		20,305.10	691.52

BUSSEY INSTITUTION.

Woodland Hill (part),		
Laboratory of Comparative Pathology building, .	14,736.84	

ARNOLD ARBORETUM.

Robert Charles Billings,		
$5,000 Butte Water Co. 1st M. 5's of 1921, ...	4,000.00	250.00

SPECIAL FUNDS.

Bussey Trust,		
Real Estate, ...	392,710.18	15,981.86
Robert Troup Paine (accumulating) ($178.55 deducted from income for sinking premiums),		
$38,000 Massachusetts 3½'s of 1913, ...	39,375.13	1,185.25
5,000 " " 1916, ...	5,250.25	154.15
4,000 " " 1935, ...	4,236.22	66.22
3,000 " " 1938, ...	3,307.08	95.83
Fund of the **Class of 1834,**		
Policy of Mass. Hospital Life Insurance Co., . . .	1,000.00	40.00
Amounts carried forward, ...	$1,493,938.89	$60,699.71

Amounts brought forward,	$1,493,938.89	$60,699.71
Fund of the **Class of 1844**,		
Policy of Mass. Hospital Life Insurance Co.,	6,500.00	260.00
Fund of the **Class of 1853**,		
Policy of Mass. Hospital Life Insurance Co.,	3,725.00	149.00
Charles L. Hancock Bequest (part),		
Real Estate in Chelsea,	420.50	
Calvin and **Lucy Ellis** Aid (part),		
Real Estate in Boston,	22,500.00	311.36
Price Greenleaf. ($869.90 deducted from income for sinking premiums.) The total amount of this Fund is $788,865.31, which is invested as follows: —		
$3,000 Chicago, Burl. & Quincy R. R. 4's of 1922,	2,880.00	120.00
360 shares Boston & Lowell R. R.,	46,800.00	2,880.00
317 " Boston & Maine R. R.,	48,724.00	2,219.00
237 " Fitchburg R. R., preferred,	22,306.27	1,185.00
355 " Old Colony "	63,190.00	2,485.00
23 " N. Y. Central & Hudson River R. R.,	2,635.00	115.00
290 " Northern R. R. (N. H.),	29,290.00	1,885.00
52 " West End Street Railway, preferred,	4,305.56	208.00
34 " Central Vermont R'y,	428.72	
707 " Pennsylvania R. R.,	51,856.04	2,121.00
15 " Boston Real Estate Trust,	20,703.75	675.00
100 " Paddock Building Trust,	10,000.00	350.00
$70,000 American Bell Telephone Co. 4's of 1908,	70,515.80	2,671.05
70,000 Broadway Realty Co. Purchase money 1st M. 5's of 1926,	74,144.68	3,315.78
24,000 Burl. & Mo. R. R. R. in Neb. non ex. 6's of 1918,	24,205.55	1,028.86
43,500 Central Vermont R'y 1st M. 4's of 1920,	37,845.00	1,740.00
50,000 Chic. Junc. R'ys & Union Stock Yards 5's of 1915,	47,000.00	2,500.00
8,000 Kansas City, Fort Scott & Memphis cons. M. 6's of 1928,	9,712.95	408.63
50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's of 1918,	49,750.00	2,500.00
25,000 New England Tel. & Tel. Co. 6's of 1906,	25,148.43	1,425.78
34,000 New York Central & Hudson River R. R. (Michigan Central Collateral) 3½'s of 1998,	28,412.10	1,190.00
32,000 Northern Pacific–Great Northern Joint 4's (C. B. & Q. collateral) of 1921,	19,993.55	1,280.00
50,000 Union Pacific R.R. 1st M. & L.G. 4's of 1947,	44,625.00	2,000.00
50,000 Note of Massachusetts Cotton Mills,	50,000.00	2,798.61
Cash in City Trust Co.,	4,392.91	69.36
George Smith Bequest (part),		
$13,000 Citizens Street R'y Co., Shelby County, Tennessee, Gold 6's of 1916,	14,369.33	
4,000 City of Commerce, Texas, Permanent Improvement 6's of 1921,	4,021.33	
Amounts carried forward,	$2,334,340.36	$98,591.14

	Amounts brought forward, ...	$2,334,340.36	$98,591.14
George Smith Bequest (*continued*).			
$10,000	Du Quoin, Ill., Water Works Co. 6's of 1901, ...	1.00	
17,000	City of Ennis, Texas, Bridge and Street Improvement 6's of 1935, ...	17,090.67	
3,000	Grand River Township, Cass County, Missouri, Funding 5's of 1917, ...	3,075.83	
11,000	Jones County, Texas, Ref. Court House 5's of 1937, ...	10,622.63	
20,000	Laclede Gas Light Co. 5's of 1919, . . .	20,000.00	
4,000	Lampasas Co., Texas, Bridge 5's of 1910,	4,062.78	
500	City of Whitewright, Texas, Permanent Improvement 6's of 1914, ...	500.17	
32,000	United States Steel Corporation 5's of 1963,	24,000.00	
315 shares	Boatmen's Bank of St. Louis, ...	70,875.00	
200 "	Laclede Gas Light Co., preferred, . .	18,800.00	
480 "	United States Steel Corporation, pref.,	26,400.00	
	Totals, ...	$2,529,768.44	$98,591.14

The other Funds are invested as a whole. The general investments are stated in detail on pages 40, 41, 42, and 43 of this report. The usual summary of them, and of their income, is as follows: —

Investments.	Principal, Aug. 1, 1903.	Principal, July 31, 1904.	Income.
Notes, Mortgages, &c., ...	$1,659,000.00	$1,334,000.00	$79,574.22
Railroad Bonds, ...	5,270,059.35	5,853,823.19	228,714.69
Sundry Bonds, ...	1,623,406.48	1,827,982.44	71,257.07
Railroad Stocks, ...	617,550.17	805,375.17	37,121.33
Manufacturing and Telephone Stocks,	194,344.64	277,062.77	15,767.50
Real Estate Trust Stocks, ...	407,629.72	695,421.60	17,485.67
Real Estate, ...	2,796,354.66	2,305,087.56	138,648.31
Advances to **Bussey** Trust, ...	59,068.11	53,501.81	2,362.72
" " **Cowdin** Real Estate, .	2,152.94		
" " **Calvin & Lucy Ellis** Real Estate, ...		5.54	
" " Medical School Undertaking, ...	485,763.24	496,101.77	18,958.03
" " Observatory, ...	3,362.84	5,453.52	168.14
" " **Peabody** Museum of Am. Archaeology and Ethnology, ...	3,123.51	2,041.66	156.18
" " Botanic Department, . .	6,897.98	7,261.09	344.90
" " Dining Hall Association,	44,339.16	45,990.14	2,077.34
" " **Randall** Hall "	33,702.27	33,202.27	1,725.90
" " Classical Publication Fund of the Class of 1856,	615.72	1,177.12	30.78
" " Stadium, ...		57,932.73	745.12
" " Sundry Accounts, . . .	1,391.26	730.94	
Amounts carried forward, . .	$13,208,762.05	$13,802,151.32	$615,137.90

Investments.	Principal, Aug. 1, 1903.	Principal, July 31, 1904.	Interest.
Amounts brought forward, . .	$13,208,762.05	$13,802,151.32	$615,137.90
Term Bills due in October, ...	241,773.03	249,422.71	
" " overdue, ...	10,147.50	8,870.39	
Cash in Adams Trust Co., ...	47,260.22	10,478.31	803.83
" City Trust Co., ...	34.43		
" Equitable Trust Co., ...		105,938.41	938.41
" National Union Bank, . . .	62,090.35	15,413.69	933.10
" Old Boston National Bank, .	13,922.86	4,253.87	1,764.14
" Old Colony Trust Co., . . .			100.05
" hands of Bursar, ...	21,508.17	29,455.96	
Totals of general investments, .	$13,605,498.61	$14,225,984.66	$619,677.43
Totals of special investments, .	2,258,023.09	2,529,768.44	98,591.14
Amounts, ...	$15,863,521.70	$16,755,753.10	$718,268.57

At the meeting of the Corporation, October 26, 1891, it was

"*Voted*, that the sum of $23,341.97 being the net gain from sales of bonds at a profit, heretofore credited to the account of Railroad Bond Premiums, be transferred as of July 31, 1891, to a new account to be called 'Gains and Losses for General Investments,' which account shall be credited with all gains and charged with all losses hereafter arising from sales of property belonging to the general investments. As this account belongs pro rata to all the Funds sharing in general investments it is not to be allowed interest when its balance is on the credit side nor to be charged with interest when its balance is on the debit side."

The gains arising from the sale during the year of certain railroad bonds, amounting to $1,193.05, were credited to "Gains and Losses for General Investments" in accordance with the terms of the vote of October 26, 1891. The balance to the credit of that account, July 31, 1904, was $585,643.23.

The sums of $9,881.95 and $1,260.63 have been deducted from the income of all bonds bought at a premium and held respectively as general and special investments, and have been applied, as the fair yearly repayment from income, towards sinking the whole of these premiums at the maturity of the bonds.

The net income of the general investments has been divided at the rate of $4\frac{77}{100}$ per cent. among the Funds to which they belong (excluding "Gains and Losses for General Investments"), after allowing special rates to certain temporary Funds and balances. The fraction, which was $656.05, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1902–03 shows an increase of nine one-hundredths of one per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments; the income and the expenditure for the Lawrence Scientific School and the College being combined in the College account: —

Interest on Funds for			
University Salaries and Expenses, ...		$51,547.77	
Library Salaries and Expenses (not books), . . .		29,550.84	
College Salaries and Expenses, ...		86,521.25	
Receipts from students, ...		599,280.92	
Sundry receipts, as follows: —			
Gifts for Salaries and Expenses, ...	$5,086.05		
Use of buildings (not University Houses and Lands), ...	4,020.00		
Sales of catalogues, pamphlets, &c., . .	5,293.81		
Sundry receipts and repayments, ...	3,421.28	17,821.14	$784,721.92
Expended for			
University Salaries and Expenses, ...		$100,318.55	
Library Salaries and Expenses (not books), ...		46,303.15	
College Expenses, ...		140,336.93	
College Salaries, ...		451,797.35	
Gymnasium Expenses, ...		8,652.53	
Expenses on College Public buildings, which are not valued in the Treasurer's books, ...		34,564.95	
Expenses on College Dormitories, which are not valued in the Treasurer's books, ...		30,191.52	
Scholarships, paid by the University, ...		3,300.00	$815,464.98
Balance, showing the deficit for the year, which has been charged to the Insurance and Guaranty Fund,			$30,743.06

The following table shows the results for the years 1903–04 and 1902–03 in the several Departments of the University.

Departments.	1903–04.		1902–03.	
	Surplus.	Deficit.	Surplus.	Deficit.
University, College, Lawrence Scientific School, and Library, ...		$30,743.06		$40,403.07
Divinity School, ...		8,555.25		14,526.93
Law School, ...	$44,674.21		$31,522.18	
Medical School, ...		15,759.08		13,868.73
Dental School, ...	565.28			2,124.80
Bussey Institution, ...	806.70		918.37	
Museum of Comparative Zoölogy, . .		879.67		5,336.38
Observatory, ...		2,090.68		440.99
Peabody Museum of American Archaeology and Ethnology, . . .	1,081.85			844.91

Gifts have been received during the year as follows: —

GIFTS TO FORM NEW FUNDS OR TO INCREASE OLD ONES.

For the Arnold Arboretum Fund, from

Mrs. George R. Agassiz	$200
Caleb Chase	100
Henry P. Curtis	10
Harold C. Ernst	10
Robert H. Gardiner	25
B. F. Keith	120
Massachusetts Society for Promoting Agriculture	500
A. Shuman	100
	$1,065

From the Trustee under the will of Joseph Baker, $7,400, the remainder of Mr. Baker's bequest of $15,000, less expenses amounting to $100, the income thereof to be applied to the "encouragement and promotion of theological education."

For establishing "a fund for the annual provision of band-music for occasions during the academic year when it would promote the dignity and beauty of public ceremonies, and add to their charm and interest," $1,143 from

Mrs. Boylston A. Beal.
Miss M. L. Blake.
Mrs. Prescott Hall Butler.
Mrs. George B. Chase.
Mrs. S. V. R. Crosby.
Mrs. Howard Elliott.
Mrs. Walter Scott Fitz.
Mrs. Arthur W. Foote.
Mrs. William H. Forbes.
Mrs. F. P. Forster.
Mrs. Francis C. Foster.
Mrs. R. W. Gilder.
Mrs. William W. Goodwin.
Mrs. W. H. Gratwick.
Mrs. W. H. Gratwick, Jr.
Mrs. F. R. Halsey.
Mrs. William Hooper.
Miss K. Horsford.
Mrs. J. E. Hudson.
Mrs. G. M. Lane.
Mrs. John Lawrence.
Mrs. Morris Longstreth.
Mrs. T. K. Lothrop.
Miss Mabel Lyman.
Mrs. Charles MacVeagh.
Mrs. Franklin MacVeagh.
Mrs. J. P. Morgan, Jr.
Miss E. L. Paine.
Mrs. R. B. Potter.
Mrs. R. S. Russell.
Mrs. Winthrop Sargent.
Miss Louisa L. Schuyler.
Mrs. Q. A. Shaw, Jr.
Mrs. R. G. Shaw.
Mrs. E. R. Thayer.
Mrs. T. W. Ward.
Miss Emily Winthrop.

From the estate of Robert Charles Billings, $15,000, awarded by the surviving executor of Mr. Billings's will; $12,500 thereof to constitute a "permanent fund for the Arnold Arboretum, to be called the Robert Charles Billings

Fund, the income only to be used for the general purposes of the said Arnold Arboretum"; and $2,500 to constitute a permanent fund "to be called the Robert Charles Billings Fund for prizes for the Divinity School, the income only to be used for prizes, to be called the Billings Prizes, and awarded by vote of the Faculty of Divinity to Students of the Divinity School for improvement in pulpit delivery."

From the estate of Francis Boott, $10,000, his bequest for an annual prize of one hundred dollars, to be given to the writer of the best composition in concerted vocal music, for the performance of the successful essay, and for music, and books of musical literature.

From the estate of Samuel A. Borden, $170 additional, on account of his bequest of $2,000 for establishing the Borden Scholarship.

From Mrs. W. S. Bullard, $10, to be added to the Dental School Endowment.

From an anonymous giver, $1,500, to be added to the principal of the Fund for the Advancement of Astronomical Science (1902).

From the Class of 1856, its class fund of $7,500, to be held as the "Fund of the Class of 1856" until the death of the last surviving member of the Class, and then to be transferred to the Class Subscription Fund.

From Emile F. Williams, $100, to be added to the principal of the Asa Gray Memorial Fund.

From Mrs. Arthur W. Blake, $300, to be added to the principal of the F. B. Greenough Fund for Surgical Research.

From Robert Sever Hale and Richard Walden Hale, $5,000, for a fund "to be known as the George Silsbee and Ellen Sever Hale Fund, the income only to be expended either in the purchase of books for the library or in publication of the results of study or research in any department of the University, including Radcliffe College."

From William B. Rice, $35, to be added to the principal of the Lectures on Political Economy Fund.

Through H. A. Lamb, $1,003.40, gifts received by him from various persons, for the purpose of establishing a fund for the purchase of music, books, musical instruments, etc., for the Department of Music.

From Arthur T. Lyman, $25,000, for establishing a permanent fund, the income of which "may be entirely unrestricted in its uses for the general benefit of Harvard College at the discretion of the Corporation."

From the estate of Henry S. Nourse, $144.42 in cash and real estate and securities valued at $44,527.03, his residuary bequest, "to accumulate by addition of interest to the principal a fund of at least fifty thousand dollars ($50,000) which may bear my name and at the option of the said President and Fellows may constitute a permanent fund devoted to the needs of some department of the University or may be expended in the erection of a building for University use."

From patients of the late Dr. Joseph P. Oliver, $8,500, to found the Joseph Pearson Oliver Scholarship in the Medical School.

From the Harvard Club of Philadelphia, $10,100, for establishing "The Philadelphia Scholarship." The income thereof is to be "paid each year to a deserving Freshman or member of the first year class of the Lawrence Scientific School from Philadelphia or vicinity," or if there be no satisfactory applicant, it "may be used in aid of other deserving students, or added to the principal fund."

An unrestricted gift of six shares of the Harvard Riverside Associates stock, from

Lewis Cabot, one share	$1,000
Mrs. Alice Forbes Cary, one share	1,000
Thomas Nelson Proctor, "	1,000
Denman W. Ross, two shares	2,000
William S. Spaulding, one share	1,000
	$6,000

For the Medical School Undertaking (in addition to gifts, amounting to $608,087, which are separately entered among "Gifts for Immediate Use"), as follows: —

From John D. Rockefeller, $163,791.13, his final payment on account of his offer of $1,000,000 for new buildings and endowments.

From Robert Bacon, $60,000, to be added to his previous gift of $25,000, the whole sum to constitute a fund, the income of which is to be used for the care and increase of the medical and surgical collections.

From the estate of George Smith, $43,731.92 in cash, and securities valued at $213,818.74, on account of his residuary bequest, which, after accumulation to $450,000, is to be used for building three dormitories, to be named respectively James Smith Hall, Persis Smith Hall, and George Smith Hall.

From the estate of Miss Elizabeth R. Swift, $1,000, the final payment on account of her bequest of $3,000 for establishing the Swift Scholarship in Harvard College.

From the estate of David Ames Wells, $944.41, the final payment on account of his residuary bequest for establishing a prize and publication fund.

From the estate of Jerome Wheelock, $10, the first of a series of yearly payments of that amount, to be made by the trustee under his will, as modified and amended by compromise, for establishing the Jerome Wheelock Fund of $100,000; the income only thereof to be "used and appropriated as shall best serve the interests of said University," but Mr. Wheelock suggested that a chair be strengthened or formed for a more thorough research in geology.

From the estate of Charles L. B. Whitney, $1,194.50 additional, on account of his bequest for the purpose of founding the Mary L. Whitney Scholarship for the benefit of "some needy member of the Freshman Class."

From Miss Maria Whitney, $5,000, for establishing the Josiah Dwight Whitney Fund. From the annual income thereof the sum of $200 is to be "used for a scholarship,— or for two scholarships of $100 each—to aid meritorious students in the study of field geology or geography in the summer months,—preferably in the mountain region of the Western United States." The remaining income is to be used to aid meritorious students in making geographical excursions.

The total amount of these gifts for capital account is $633,988.55, as is also stated on page 36 of this report.

GIFTS FOR IMMEDIATE USE.

From several recently graduated College classes, $205 toward the cost of the fence built for the purpose of insuring better control of the College Yard on Commencement Day.

Through Thomas Dwight, $100 additional, for defraying expenses connected with original investigation in the Department of Anatomy.

From an anonymous giver, $100, for wax embryological models.

From an anonymous giver, $100, to be used in the same way as the income of Scholarship funds is used.

From an anonymous giver, $175, to provide for opening the Germanic Museum on Sundays.

From an anonymous giver, $75, for the benefit of some deserving student in the Law School.

From an anonymous giver, $1,200, for the publication of researches from the Sears Pathological Laboratory.

From an anonymous giver, $2,500, to be expended under the direction of Professor Peabody for the Department of the Ethics of the Social Questions.

From an anonymous giver, $25, an unrestricted gift.

From Francis Skinner, $5,000, to be added to the gifts for the completion of the Arnold Arboretum.

From Mrs. C. M. Barnard, $600, her twenty-first yearly gift for the Warren H. Cudworth Scholarships.

For the Bermuda Biological Station for Research, from

Theodore Lyman	$200
John E. Thayer	500
	$700

From John C. Phillips, $300, for the purchase of reprints from the published contributions of the Bermuda Biological Station for Research, or for the general expenses of that station.

From J. A. L. Blake, $100, to be added to the income of the Caroline Brewer Croft Fund for 1903–04.

From the Boston Committee on the Emerson Centenary, $226, for an Emerson tablet in the Divinity School Chapel.

For the Botanic Garden and Botanic Museum, from

Anonymous	$500
Anonymous	1,000
Arthur F. Estabrook	1,000
	$2,500

From Miss Abby A. Bradley, $600, to be added to the income of the William L. Bradley Fund.

From Miss Katherine E. Bullard and William N. Bullard, $500 each, their second gifts of the same amount to be used under the direction of the Shattuck Professor of Pathological Anatomy, with the approval of the President and Fellows, for the purpose of advancing the knowledge of the pathology of the nervous system.

From George L. Cheney, $357, repayment with interest of a scholarship of $150, received by him while a student in the Law School.

For the salary of an Instructor in Anthropology, from

Clarence J. Blake	$50
Trustees under the will of Mrs. Mary Hemenway	200
Robert C. Winthrop, Jr.	50
	$300

For the salary of an Instructor in the Semitic Department, from

Anonymous	$100
Anonymous	50
Anonymous	50
Anonymous	25
George V. Leverett	275
James Loeb	500
	$1,000

For the use of the Dental School during 1903–04, from officers of instruction in the School, as follows: —

Lawrence W. Baker	$66
Edwin C. Blaisdell	50
Waldo E. Boardman	75
Charles A. Brackett	375
Edward Cornelius Briggs	250
A. Harriman St. Clair Chase	40
Ernest H. Chute	50
William P. Cooke	200
H. DeW. Cross	25
J. D. Dickinson	50
John W. Dickinson	25
Forrest G. Eddy	75
Samuel T. Elliott	25
Edwin L. Farrington	50
J. Austin Furfey	50
Harry L. Grant	50
A. I. Hadley	50
F. H. Harding	50
Ernest J. Hart	25
Thomas B. Hayden	50
Amount carried forward	$1,631

Amount brought forward	$1,631
Elbridge D. King	25
Elmer J. Marston	25
Leslie H. Naylor	25
H. S. Parsons	50
Joseph T. Paul	50
C. Ernest Perkins	50
William H. Potter	200
Charles W. Rodgers	25
M. F. Rogers	25
Harry B. Shuman	25
Eugene H. Smith	500
D. F. Spinney	25
William D. Squarebrigs	25
W. H. Starratt	15
Arthur H. Stoddard	50
Ezra Fletcher Taft	50
Evan P. Wentworth	37.50
Julius G. W. Werner	25
Robert Whitehill	25
	$2,883.50

From an anonymous giver, $10, to be added to the gifts for building for the Dental School.

For supplies for the Surgical department of the Dental School, $54, from

Samuel Appleton.
William A. Bancroft.
G. W. Becker.
S. Parker Brewer.
Caleb Chase.
Cumner, Jones & Co.
Edward H. Eldredge.
A friend.
J. B. Forsyth.
Jordan, Marsh & Co.
McKenney & Waterbury Co.
J. Morse.
Samuel Shuman.
A. Stowell & Co., Inc.

From Roderick Stebbins, $50, for the renovation of the chapel in Divinity Hall.

From Mrs. Henry Draper, of New York, an additional sum of $10,000, to be expended by the Director of the Observatory in prosecuting the researches in the photography of stellar spectra, with which the late Dr. Henry Draper's name is honorably associated.

From an anonymous giver, $500, to be used for scholarships in the Department of Education.

For building Emerson Hall, from

W. B. Buck	$5
Andrew Carnegie	12,000
Mrs. Edward Cary	3,000
Miss Lilian Freeman Clark	5
Emerson Class in Elmira, N.Y.	7
A friend	100
Mrs. David P. Kimball	10,000
Miss Alice M. Longfellow	1,000
Amount carried forward	$26,117
Amount brought forward	$26,117
Mr. & Mrs. Nelson Robinson	5,000
William M. Salter	5
J. M. Sears	1,000
George F. Weld	5
Carleton Ames Wheeler	10
	$32,137
Interest on deposit	117.53
	$32,254.53

From the Department of English, $75, for a lecture before the University.

From an anonymous giver, $30, for research work in Experimental Phonetics.

From George P. Gardner, $100, for the equipment of the Geological exhibition rooms.

From John L. Gardner, $200, for lantern slides to be made from photographs in the collection of the United States Geological Survey, and to be added to the Gardner collection of photographs in the Department of Geology.

From William Amory Gardner, his second gift of $10,000 towards the construction of a new University Library Building.

For lectures by foreign geographers before students in the Department of Geology and Geography, from

Mrs. William D. Boardman	$25
George G. Kennedy	175
	$200

For scholarships in Summer field courses in Geology, from

George C. Buell	$100
A friend of the Department of Geology and Geography	200
“ “ “ “ “	100
“ “ “ “ “	100
“ “ “ “ “	100
	$600

For the Gray Herbarium, from

R. L. Agassiz	$10
J. B. Ames	10
Miss Mary S. Ames	10
Anonymous	500
Anonymous	500
Anonymous	300
Anonymous	50
Anonymous	10
Anonymous	25
Howard Payson Arnold	25
Edwin F. Atkins	25
Miss Mary F. Bartlett	20
Walter C. Baylies	10
Thomas P. Beal	10
Mrs. Arthur W. Blake	10
William P. Blake	10
Miss Mary E. Blatchford	10
James C. Braman	5
Edward M. Brewer	5
William Brewster	10
Addison Brown	10
Harold Haskell Brown	10
Stephen Bullard	10
Mrs. William S. Bullard	10
H. D. Chapin	10
Mrs. B. P. Cheney, Sr.	50
Charles F. Choate	10
Miss Cora H. Clarke	10
Miss Louise F. Coburn	10
Miss Helen Collamore	10
Amount carried forward	$1,695
Amount brought forward	$1,695
George G. Crocker	10
Mrs. Charles A. Cummings	10
Charles P. Curtis	10
Henry P. Curtis	10
Louis Curtis	10
Mrs. Abram E. Cutter	10
Samuel B. Dana	10
Frank A. Day	25
Walter Deane	15
George B. Dorr	10
Mrs. Herbert Dumaresq	10
Mrs. J. W. Elliot	10
William Endicott, Jr.	25
C. F. Fairbanks	10
J. S. Fay, Jr.	20
Mrs. J. N. Fiske	10
S. W. Fletcher	10
Miss Amy Folsom	10
Mrs. William H. Forbes	10
Francis A. Foster	10
Francis C. Foster	10
Mrs. Francis C. Foster	10
Miss Harriet E. Freeman	10
Miss C. A. French	10
A friend	25
Robert H. Gardiner	10
George A. Goddard	10
Miss A. M. Goodwin	10
Mrs. H. S. Grew	10
Amount carried forward	$2,045

Amount brought forward	$2,045
R. C. H.	20
George W. Hammond	10
Mrs. George W. Hammond	10
E. B. Haskell	10
John C. Haynes	10
Augustus Hemenway	10
Mrs. Augustus Hemenway	10
Miss Clara Hemenway	10
Miss A. P. Henchman	10
J. P. B. Henshaw	10
H. L. Higginson	10
T. W. Higginson	5
William H. Hill	10
Miss Rose Hollingsworth	5
Miss Katharine Horsford	25
Clement S. Houghton	10
Henry S. Howe	10
Charles W. Hubbard	10
Arthur Hunnewell	10
Henry S. Hunnewell	10
Walter Hunnewell	10
Edward W. Hutchins	10
Mrs. P. T. Jackson	10
Bernard Jenney	10
Edward C. Johnson	10
G. G. Kennedy	500
Mrs. Henry P. Kidder	10
David P. Kimball	10
Mrs. David P. Kimball	10
Henry H. Kimball	10
Lemuel C. Kimball	10
The Misses Kimball	10
Mrs. Harriet M. Laughlin	10
George C. Lee	10
Joseph R. Leeson	200
George V. Leverett	25
Mrs. George Linder	10
Mrs. Mary E. Lodge	15
Mr. & Mrs. Augustus P. Loring	20
Miss Katharine P. Loring	20
Arthur T. Lyman	10
Haslett McKim	10
Miss E. F. Mason	10
Miss Susan Minns	25
Mrs. Samuel T. Morse	20
William A. Munroe	10
Grenville H. Norcross	10
Mrs. Otis Norcross	10
Amount carried forward	$3,285

Amount brought forward	$3,285
Mrs. Otis Norcross, Jr.	10
Miss Emily L. Osgood	10
Mrs. Henrietta Page	5
James L. Paine	10
Frank E. Peabody	10
F. H. Peabody	500
Miss M. R. Peabody	10
Edward C. Perkins	10
Mrs. J. C. Phillips	10
Henry Pickering	10
Mrs. Henry Pickering	10
Mrs. Dudley L. Pickman	20
David Pingree	15
Laban Pratt	10
Thomas E. Proctor	20
Mr. & Mrs. George Putnam	20
Miss Sarah E. Read	10
George E. Richards	10
S. W. Rodman	10
Mrs. M. Denman Ross	10
Mrs. Waldo O. Ross	10
J. E. Rothwell	10
Mrs. R. S. Russell	10
Timothy T. Sawyer	10
George O. Sears	10
Mrs. K. W. Sears	10
Francis Shaw	10
Mrs. G. H. Shaw	20
Francis Skinner	25
Francis Skinner, Jr.	10
F. P. Sprague	10
Mrs. S. H. Swan	5
I. Homer Sweetser	10
John E. Thayer	100
Charles H. Tweed	10
Benjamin Vaughan	10
Miss Cornelia Warren	10
B. M. Watson	10
F. G. Webster	25
Mrs. F. G. Webster	25
Mrs. Charles W. Welch	10
Mrs. C. T. White	10
George R. White	500
S. B. Whiting	10
George Wigglesworth	10
Miss Adelia C. Williams	10
John D. Williams	20
Moses Williams	150
Amount carried forward,	$5,065

Amount brought forward	$5,065	Amount brought forward	$5,210
Ralph B. Williams	100	Edward S. Wood	10
A Resident of Winchester, Mass.	10	Mrs. Charlotte F. Woodman	10
Samuel H. Winkley	10	Miss Mary Woodman	10
Robert Winsor	25	John G. Wright	10
Amount carried forward	$5,210		$5,250

From the Harvard Club of Buffalo, $200, its first yearly gift for the maintenance of the scholarship of the Harvard Club of Buffalo.

From Miss Charlotte Hedge, $200, for a tablet in the chapel of Divinity Hall, in memory of her father, Professor Frederic Henry Hedge.

From Augustus Hemenway, $1,000, for the purchase of a painting by Joseph Lindon Smith, for the Department of Architecture.

From the Committee on the Regulation of Athletic Sports, $20,000, to be added to its previous gifts for improvements upon, and additions to, The Soldier's Field, to be made by said Committee, with the approval of the Corporation.

From Gardiner M. Lane, $1,000, for lectures to be given, under the auspices of the Department of The Classics, by some well known scholar or literary man from abroad.

From the Lawrence Scientific School Association, $150, for a scholarship for 1904–05 in the Lawrence Scientific School, or in the Summer courses of 1904.

From James H. Hyde, $700, for the Fellowship of the Cercle Français de l'Université Harvard; $385, for preparing a catalogue of the Molière books in the Bôcher collection; $515 for binding books in said collection; and $12.35 for the French Department Library.

From Edward Mallinckrodt, $1,000, for providing additional shelf-room for books in the library in Boylston Hall, for adapting said library to the purposes of a reading room, and for the purchase of books to be used therein.

From Hiram Bingham, Jr., $75, for assistance in reclassifying the books on South American History in the College Library.

From Archibald Cary Coolidge, $400, for the services of an assistant and for cataloguing in the College Library.

From the Japan Club of Harvard University, $6, for binding books relating to Japan in the College Library.

For the purchase of books for the College Library, from

Francis Randall Appleton	$100
Lawrence Smith Butler, for books on Paris	50
Archibald Cary Coolidge	1,002.40
Archibald Cary Coolidge and Hiram Bingham, Jr., for books on South America	185
Harold J. Coolidge, for books on China	100
W. Bayard Cutting, Jr., for books on Florentine History	50
Dante Society, for books for the Dante Collection	150
Department of English, for books in English Literature	400
Edwin F. Gay	23
Ernest L. Gay	3.84
Henry S. Hunnewell	100
Adrian Iselin, for books on Swiss history	50
Edwin Stanton Mullins, for books on folk-lore	50
William Phillips, for books, maps, etc., on London	100
John Harvey Treat, for books on the Catacombs and Christian Antiquities of Italy	300
Beekman Winthrop, for books on the Philippine Islands	50
	$2,714.24

For the purchase of books on Dutch history for the College Library, from

Anonymous	$10
Anonymous	5
Edgar Huidekoper	20
	$35

For the purchase of early editions of the printed Bible, from

Robert Codman	$10
J. H. Gardiner	25
Charles Thorndike	20
Henry B. Washburn	2
	$57

For the purchase of books in English literature of the seventeenth and eighteenth centuries for the College Library, from

Walter C. Baylies	$25
C. W. Hanford	25
Herbert M. Sears	100
Mrs. Charles F. Sprague	150
Beekman Winthrop	50
	$350

For the purchase of books on Economics, from

T. Jefferson Coolidge	$50
Dwight F. Davis	25
George B. Leighton	50
	$125

From Mrs. Helen Bigelow Merriman and Roger Bigelow Merriman, $65.47, for the purchase of a collection of contemporary pamphlets on the Thirty Years' War.

From Mrs. George A. Nickerson, $200, her first yearly gift in memory of her husband, George Augustus Nickerson, A.B. 1876, LL.B. 1879, for the purchase of books on folk-lore, for the College Library.

From the Department of The Classics, $150, for the purchase of books for the Classical Library.

From George F. Fabyan, $25, for the purchase of books for the laboratory of Comparative Pathology.

Through John F. Moors, Treasurer, $446.43, to be expended under the direction of Professor Hanus for the library of the Department of Education.

From Percival Lowell, $70, for the library of the Embryological Laboratory.

From the Department of Mathematics, $15, for the purchase of books for the library of that department.

For the purchase of books and material for the Department of Political Economy, from

Robert Walton Goelet	$100
James Loeb	50
E. V. R. Thayer, Jr.	25
	$175

From the Society for Promoting Theological Education, $1,331.47, for the Library of the Divinity School.

From John McMahon, $300, for the purchase of books for the Law School Library.

For the purchase of books for the Museum of Comparative Zoölogy, from

William Brewster	$50
Louis Cabot	100
A. F. Estabrook	50
A. Hemenway	100
F. H. Peabody	100
Dudley L. Pickman	50
John E. Thayer	100
	$550

For the expenses of a medical expedition to Manila under the direction of Professor Councilman, from

Augustus Hemenway	$1,000
W. L. Richardson	1,000
J. C. Phillips	2,000
	$4,000

From the Massachusetts Society for Promoting Agriculture, $2,000, "to be expended at the Arnold Arboretum by the Director, to increase the knowledge of Trees."

For the Medical School Undertaking (in addition to gifts, amounting to $223,791.13, which are separately entered among "Gifts to form New Funds or to increase Old Ones"), as follows: —

From J. Pierpont Morgan, $400,000, on account of his offer for the erection of three Memorial Halls.

From Mrs. Collis P. Huntington, $102,087, on account of her offer for the erection of the Collis P. Huntington Laboratory.

From David Sears, $80,000 additional, on account of his offer for the erection of one of the buildings.

For "Land, Buildings, Equipment, and Endowments," from

Elliot C. Lee	$25,000
Miss Mary Lee Ware	1,000
	$26,000

For the Peabody Museum of American Archaeology and Ethnology, from

Mrs. N. E. Baylies	$25
Clarence B. Moore	500
Stephen Salisbury	200
	$725

From Thomas E. Proctor, $200, for the equipment for the course in Forestry in the Lawrence Scientific School.

From James J. Putnam and Moorfield Storey, trustees, $1,000, for certain salaries in the Medical School.

From an anonymous giver, $350, for the Ricardo Prize Scholarship for 1904–05.

From W. L. Richardson, $100, towards defraying expenses of research work in the laboratory of Pharmacology and Therapeutics.

From Mr. and Mrs. Nelson Robinson, $10,000 additional, for the equipment of Nelson Robinson Jr. Hall.

For the expenses of the Harvard University exhibit at the St. Louis Exposition, from

George E. Adams	$100
Henry Chalfant	50
Frederic A. Delano	100
Harvard Club of Western Pennsylvania	100
David P. Kimball	100
Robert T. Lincoln	100
A. N. McGeoch	50
Amount carried forward	$600
Amount brought forward	$600
George D. Markham	50
Nathaniel C. Nash	100
E. C. Pickering	55
E. C. Rowse	50
Augustus H. Vogel	25
Moses Williams	50
	$980

From Henry F. Sears, $1,550, to be added to his previous gifts for the Pathological Department Library.

From George R. Shaw, $100.22, for a microtome for the Arnold Arboretum.

From Edward M. Shepard, $50, for "any purpose of the University to which that sum will be helpful."

From the anonymous giver, who previously gave $500 to be used in the Department of Pathology in the Medical School for the expenses of an investigation of small pox, $500 additional for the same purpose.

For the South End House Fellowship, from

Julian L. Coolidge	$200
William A. Dupee	50
Edward W. Grew	25
Randolph C. Grew	100
Edward J. Holmes	100
John F. Moors	25
Reginald C. Robbins	50
	$550

From the Class of 1879, $100,000, towards the erection of the Stadium on The Soldier's Field.

From James Stillman, $25,000, to be added to his previous gift of $50,000 for the erection of a contagious ward in connection with the Stillman Infirmary.

From James J. Storrow, $2,000, for the purchase of equipment for Pierce Hall.

For the Surgical Laboratory, from

John S. Ames	$1,000
C. W. Amory	200
Francis Stanton Blake	100
George Baty Blake	100
Francis Bartlett	100
W. S. Bigelow	200
Henry C. Pierce	400
Mrs. H. N. Slater	100
	$2,200

For a tablet in the chapel of the Harvard Divinity School in memory of Professor Joseph Henry Thayer, from

T. Jefferson Coolidge	$25	Amount brought forward	$205
W. W. Fenn	10	George H. Palmer	5
George P. Fisher	5	Francis G. Peabody	20
Henry W. Foote	10	John W. Rice	2
George A. Gordon	20	William R. Richards	10
B. A. Jenkins	5	James H. Ropes	22
Arthur S. Johnson	50	William L. Ropes	50
Edward C. Johnson	25	H. Porter Smith	2
William Lawrence	20	Richard H. Stearns	25
Robert McDonald	5	Wallace N. Stearns	2
Alexander McKenzie	10	Charles F. Thwing	10
Edward C. Moore	10	A. S. Twombly	5
Robert S. Morison	10	Earl M. Wilbur	2
Amount carried forward	$205		$360

From Robert Winsor, $3,750, for the payment of a salary in the Medical School.

From John G. Wright, $500, for the Bacteriological laboratory, for photographic purposes.

The total amount of these gifts for immediate use is $875,575.21, as is also stated on page 34 of this report.

CHARLES F. ADAMS, 2D, *Treasurer.*

BOSTON, November 22, 1904.

ACCOUNTS

General Statement of Receipts and Disbursements for the year ending

INCOME.

Interest on notes, mortgages, advances, &c.,		**$113,579.59**
Interest on Policies Mass. Hospital Life Insurance Co.,		**849.00**
Interest on Bank Deposits.		
Deposit in Adams Trust Co.,	**$803.83**	
" City Trust Co.,	**69.36**	
" Equitable Trust Co.,	**938.41**	
" National Union Bank,	**933.10**	
" Old Boston National Bank,	**1,764.14**	
" Old Colony Trust Co.,	**100.05**	**4,608.89**
Interest on Public Funds (after deducting $178.55 for sinking premiums).		
Massachusetts 3½'s of 1913,	**$1,185.25**	
" " " 1916,	**154.15**	
" " " 1935,	**66.22**	
" " " 1938,	**95.83**	
City of Boston 3½'s,	**350.00**	**1,851.45**
Interest on Railroad Bonds (after deducting $7,994.12 for sinking premiums).		
Baltimore & Ohio 4's,	**$4,000.00**	
" " (P. L. E. & W. V. system) Ref. 4's,	**4,000.00**	
" " So. Western 3½'s,	**3,500.00**	
Bangor & Aroostook Ref. 4's,	**5,000.00**	
Burlington & Mo. River in Neb. 6's,	**14,153.95**	
Central Vermont 4's,	**1,740.00**	
Chicago & Alton 4's,	**4,000.00**	
Chicago, Burlington & Quincy 4's,	**120.00**	
" " " Ill. Div. 4's,	**955.56**	
" " " 3½'s,	**15,243.80**	
Chicago & No. Western Gen. M. 3½'s,	**3,488.23**	
" " Madison Extension 7's,	**5,310.09**	
Chicago, Rock Island & Pacific 4's,	**3,920.90**	
Chicago Terminal Transfer 4's,	**4,000.00**	
Eastern 6's,	**10,194.00**	
Eastern sterling 6's,	**5,710.21**	
Fort Scott, So. E. & Memphis 7's,	**2,485.00**	
Indiana, Illinois & Iowa 4's,	**4,000.00**	
Kansas City, Fort Scott & Memphis 6's,	**8,910.56**	
Kansas City, Memphis & Birmingham Income 5's,	**5,700.00**	
Kansas & Missouri 5's,	**2,700.00**	
Lake Shore & Michigan Southern 4's,	**305.56**	
Long Island 4's,	**12,000.00**	
Long Island Ref. 4's,	**54.00**	
Louisville & Jeffersonville Bridge 4's,	**8,000.00**	
Massachusetts Electric Co's. 4½'s,	**4,500.00**	
Amounts carried forward,	**$133,991.86**	**$120,888.93**

of the Treasurer of Harvard College,
July 31, 1904.

EXPENSES.

Paid to account of expenses in the		
University, as per Table I (page 59).		
Salaries,	$40,966.27	
Retiring Allowances,	17,681.78	
Sundry payments made from special Funds, gifts, and receipts,	23,319.15	
Other expenses,	52,559.83	$134,527.03
College, as per Table II (page 64).		
Salaries for instruction,	$436,619.35	
Sundry salaries,	15,178.00	
Expenses on College Public Buildings, which are not valued in the Treasurer's books and which are not separately entered in this table,	34,564.95	
Expenses on College Dormitories, which are not valued in the Treasurer's books,	30,191.52	
General expenses,	74,610.03	
Fellowships,	25,502.50	
Scholarships,	49,435.02	
Exhibitions,	28,140.86	
Prizes,	2,531.59	
Botanic Garden and Botanic Museum,	7,978.61	
Gray Herbarium,	10,546.85	
Hemenway Gymnasium,	8,652.53	
Jefferson Physical Laboratory,	4,110.42	
Appleton Chapel,	8,425.28	
Summer Schools,	25,943.52	
Books, from special Funds and gifts,	2,223.26	
Apparatus and expenses for research, from special Funds and gifts,	9,246.34	
Publication expenses, from special Funds and gifts,	5,367.98	
Sundry payments from special Funds and gifts,	16,610.32	
Appropriations for collections and laboratories,	31,358.10	827,237.03
Library, as per Table III (page 82).		
Salaries,	$15,250.00	
Services and wages,	19,129.83	
Books,	23,660.35	
Other expenses,	12,122.57	70,162.75
Divinity School, as per Table IV (page 85).		
Salaries for instruction,	$31,453.49	
Scholarships and Exhibitions,	2,275.81	
Library building alterations,	4,051.07	
Other expenses,	10,977.84	48,758.21
Amount carried forward,		$1,080,685.02

General Statement of Receipts and Disbursements for the year ending

INCOME (*continued*).

Amounts brought forward, ...	$133,991.86	$120,888.93
Interest on Railroad Bonds (*continued*).		
Metropolitan West Side Elevated 4's, ...	4,000.00	
" " " Extension 4's, .	4,200.00	
Minneapolis Union 5's, ...	4,866.83	
New York Central & H. R. 3½'s (L. S. & M. S. Coll.),	10,500.00	
New York Central & H. R. 3½'s (M. C. Coll.), . .	1,190.00	
New York, Ontario & Western 4's, ...	7,884.13	
Northern Pacific–Great Northern Joint 4's, ...	18,040.00	
Oregon Short Line 5's, ...	4,583.03	
Pennsylvania Co. 3½'s, ...	3,272.50	
Philadelphia, Baltimore & Washington 4's, ...	7.77	
Rutland Car Trust 4½'s, ...	4,230.00	
St. Louis & San Francisco Ref. 4's, ...	4,000.00	
Schenectady 4½'s, ...	4,371.79	
Second Avenue 5's, ...	4,605.26	
Terminal R. R. Association of St. Louis 4's, . . .	8,000.00	
Third Avenue 4's, ...	7,975.31	
Union Pacific 4's, ...	18,000.00	243,718.48
Interest on Sundry Bonds (after deducting $2,969.91 for sinking premiums).		
American Bell Telephone Co. 4's, ...	$10,162.71	
" Tel. and Tel. Co. 4's, ...	8,000.00	
Broadway Realty Co. 5's, ...	10,082.03	
Brookline Gas Light Co. 5's, ...	250.00	
Butte Water Co. 5's, ...	250.00	
Chicago Edison Co. 5's, ...	4,709.60	
Chicago Junc. Railways & Union Stock Yards Co. 5's,	14,979.85	
" " " " 4's,	4,000.00	
Girard Point Storage Co. 3½'s, ...	691.52	
Metropolitan Tel. & Tel. Co. 5's, ...	7,500.00	
Mexican Coal & Coke Co. 5's, ...	300.00	
Montreal Light, Heat and Power Co. 4½'s, ...	4,466.66	
Municipal Gas & Electric Co. 4½'s, ...	4,500.00	
New England Tel. & Tel. Co. 6's, ...	7,128.90	
" " " 5's, ...	4,058.82	
St. Louis National Stock Yards Co. 4's, ...	4,081.11	85,161.20
Dividends on Railroad Stocks.		
Boston & Lowell, ...	$2,880.00	
Boston & Maine, ...	2,219.00	
Chicago & Northwestern, ...	3,500.00	
Fitchburg, preferred, ...	1,185.00	
Manhattan, ...	3,850.00	
Massachusetts Electric Co's., preferred, ...	2,500.00	
Amounts carried forward, . . .	$16,134.00	$449,768.61

EXPENSES (*continued*).

Amount brought forward, ...		$1,080,685.02
Law School, as per Table V (page 87).		
Salaries for instruction, ...	$52,233.33	
Librarians and assistants, ...	10.743.14	
Scholarships, ...	5,100.00	
Expenses on account of the proposed addition to **Austin** Hall, ...	10.00	
Other expenses, ...	24,182.16	92,268.63
Medical School, as per Table VI (page 89).		
Salaries for instruction, ...	$100,075.00	
Fees repaid to Instructors, ...	6,726.00	
Fellowships, ...	2,675.00	
Scholarships and Exhibitions, ...	4,819.86	
Prize and expenses, ...	87.49	
Warren Anatomical Museum, ...	1,097.60	
Books, from special Funds and gifts, ...	1,692.43	
Publications, from special Funds and gifts, . .	1,200.00	
Sundry payments made from special Funds and gifts, ...	5,313.06	
Expedition to Manila, from special gifts, . .	4,000.00	
Laboratory appropriations, ...	9,916.38	
Other expenses, ...	28,536.69	166,139.51
Medical School Undertaking, as per Table VI (page 93).		
Building expenses, ...	$485,621.31	
Interest on advances, ...	18,680.11	
Other expenses, ...	2,609.77	506,911.19
Dental School, as per Table VII (page 94).		
Salaries for instruction, ...	$12,420.00	
Other expenses, ...	13,272.57	25,692.57
Museum of Comparative Zoölogy, as per Table VIII (page 95).		
Paid from sundry Funds on the order of the Faculty, ...	$31,458.24	
Sturgis Hooper Fund, salary and expenses,	5,064.25	
Scholarship, ...	250.00	36,772.49
Peabody Museum of American Archaeology and Ethnology, as per Table IX (page 96).		
Peabody Professor Fund, **Peabody** Professor, ...	$2,354.67	
Fellowship, ...	1,148.90	
Other expenses, ...	6,452.66	
	$9,956.23	
Less amount paid from University income, . .	1,295.31	8,660.92
Amount carried forward, ...		$1,917,130.33

General Statement of Receipts and Disbursements for the year ending

INCOME (*continued*).

Amounts brought forward, . . .			$16,134.00	$449,768.61
Dividends on Railroad Stocks (*continued*).				
New York Central & Hudson River, ...			6,240.00	
New York, New Haven & Hartford, ...			6,333.33	
Northern (N. H.), ...			1,885.00	
Old Colony, ...			2,485.00	
Pennsylvania, ...			19,434.00	
West End Street, preferred, ...			208.00	52,719.33
Dividends on Manufacturing Stocks.				
American Sugar Refining Co., ...			$112.00	
Amoskeag Manufacturing Co., ...			1,200.00	
Brookside Mills, ...			87.50	
Lanett Cotton Mills, ...			90.00	
Merrimack Manufacturing Co., ...			467.50	
Pacific Mills, ...			2,400.00	
Pennsylvania Steel Co., preferred, ...			73.50	
United States Steel Corporation, preferred, . . .			43.75	4,474.25
Dividends on Real Estate Trust Stocks.				
Barristers Hall Trust, ...			$2,500.00	
Boston Real Estate Trust, ...			675.00	
Department Store Trust, ...			5,000.00	
Essex Street Trust, ...			1,500.00	
Kimball Building Trust, ...			674.17	
Paddock Building Trust, ...			4,161.50	
Post Office Square Building Trust, ...			4,000.00	18,510.67
Dividends on Sundry Stocks.				
American Telephone & Telegraph Co., ...			$11,700.00	
Calumet & Hecla Mining Co., ...			600.00	12,300.00
Real Estate Investments, from rents, &c., net receipts.				
Cambridge (University Houses and Lands).				
Gross receipts, ...		$43,640.94		
Less Taxes, ...	$4,862.13			
Insurance, ...	1,004.85			
Repairs, improvements, care, &c., ...	15,708.31	21,575.29	$22,065.65	
Boston (general investments).				
Gross receipts, ...		$214,769.14		
Less Taxes, ...	$43,083.50			
Insurance, ...	2,854.23			
Repairs, improvements, care, &c., ...	25,844.59			
Repaid to capital, . . .	4,338.51	76,120.83	138,648.31	
Amounts carried forward, . . .			$160,713.96	$537,772.86

EXPENSES (*continued*).

Amount brought forward,		$1,917,130.33
Observatory, as per Table X (page 97).		
Salaries,	$16,500.00	
Services and wages,	6,918.16	
Addition to fireproof building,	2,881.30	
Other expenses,	29,306.62	55,606.08
Bussey Institution, as per table XI (page 99).		
Salaries for instruction,	$8,000.00	
Other expenses,	8,887.62	16,887.62
Arnold Arboretum, as per Table XII (page 99).		
Salaries,	$3,500.00	
Other expenses,	14,240.32	17,740.32
Annuities from the following Funds.		
Advancement of Astronomical Science (1901),	$2,357.83	
" " " " (1902),	453.25	
Bussey Trust,	4,000.00	
Caroline Brewer Croft,	2,153.38	
Gurney,	1,000.00	
Professorship of Hygiene,	4,519.22	
Alexander W. Thayer,	480.00	
Charles Wilder,	1,872.00	
Henry S. Nourse,	250.00	17,085.68
Class Funds.		
Paid the Secretary of the **Class of 1853**,		149.00
Sundry payments.		
Eaton Professorship of the Science of Government, legal expenses,	$190.05	
Calvin and **Lucy Ellis** Fund, taxes and expenses,	114.96	
Calvin and **Lucy Ellis** Aid Fund, plan,	.75	
Charles L. Hancock Fund, taxes on Chelsea real estate,	43.71	
Henry S. Nourse Fund, legal and other expenses,	349.48	
George Smith Bequest, express charges,	29.70	
Thayer Scholarship Fund, legal expenses,	10.00	
Daniel Williams Fund, for the benefit of the Masphee and Herring Pond Indians,	781.22	
Sarah Winslow Fund, to the Minister and the Teacher at Tyngsborough, Mass.,	330.88	
Woodland Hill Fund, taxes on Muddy River land, boundary wall on Walter St., and land on Weld St.,	1,823.85	
Gifts for Cuban Teachers, expenses,	100.00	3,774.60
Amount carried forward,		$2,028,373.63

General Statement of Receipts and Disbursements for the year ending

INCOME (*continued*).

Amounts brought forward, ...			$160,713.96	$537,772.86
Real Estate Investments (*continued*).				
Bussey real estate.				
Gross receipts, ...		$42,676.94		
Less Taxes, ...	$10,325.96			
Insurance, ...	1,227.26			
Interest, ...	2,362.72			
Repairs, improvements, care, &c., ...	2,209.43			
Heat and power, . . .	4,928.41			
Repaid to capital, . . .	5,641.30	26,695.08	15,981.86	
Sundry estates (special investments).				
Gross receipts, ...		$6,491.48		
Less Taxes, ...	$1,917.90			
Repairs, ...	773.69	2,691.59	3,799.89	180,495.71
Receipts from Students.				
Tuition fees, regular courses.				
College, ...		$435,541.16		
Divinity School, ...		7,535.50		
Law School, ...		108,450.00		
Medical School, ...		67,293.00		
Dental "		13,060.00		
Bussey Institution, ...		2,550.00	$634,429.66	
Tuition fees, Summer courses.				
College, ...		$25,151.67		
Divinity School, ...		705.00		
Medical "		4,772.50	30,629.17	
Laboratory fees.				
College, ...		$28,097.70		
Medical School, ...		2,954.88		
Dental "		2,482.61	33,535.19	
Examination fees				
College. Admission, ...		$4,555.00		
Condition, ...		540.00		
Medical School, ...		522.00		
Dental "		405.00	6,022.00	
Graduation fees.				
College, ...		$9,320.00		
Medical School, ...		3,900.00	13,220.00	
Matriculation fees, Medical School, ...			360.00	
Rooms in dormitories.				
College buildings, ...		$102,227.13		
Less receipts from students, separately entered in University Houses and Lands account, ...		21,364.63		
		$80,862.50		
Divinity Hall, ...		2,740.00	83,602.50	
Amounts carried forward, ...			$801,798.52	$718,268.57

of the Treasurer of Harvard College,
July 31, 1904.

EXPENSES (*continued*).

Amount brought forward,		$2,028,373.63
Construction Funds.		
Emerson Hall,	$3,220.40	
Semitic Building	397.54	
John Simpkins Hall,	1,250.00	
Stadium,	226,152.29	
Stillman Infirmary,	8,087.35	
University Museum,	1,891.82	240,999.40
Total amount of expenses,		$2,269,373.03

INVESTMENTS AND SUNDRY PAYMENTS.

GENERAL INVESTMENTS.

$200,000	American Tel. & Tel. Co. 3 year 5% Gold Coupon Notes of 1907,	$198,000.00	
100,000	Boston & Northern Street R'y 1st M. Ref. 4's of 1954,	94,000.00	
200,000	Chicago, Burlington & Quincy R. R. (Illinois Division) 4's of 1949,	201,000.00	
100,000	Lake Shore & Michigan Southern R'y Deb. 4's of 1928,	95,000.00	
9,000	Long Island R. R. Ref. M. 4's of 1949,	8,550.00	
100,000	Missouri Pacific R'y 5% Notes of 1906,	99,000.00	
100,000	Old Colony Street R'y 1st M. Ref. 4's of 1954,	94,000.00	
100,000	Pennsylvania Company Coll. Trust 4½% Notes of 1905,	99,843.75	
10,000	Philadelphia, Baltimore & Washington R. R. 1st. M. 4's of 1943,	10,100.00	
10,000	St. Louis National Stock Yards Co. 1st M. 4's of 1930,	9,150.00	
700	shares Manhattan R'y,	92,762.50	
500	" New York, New Haven & Hartford R.R.,	95,062.50	
2,500	" Department Store Trust,	220,291.88	
750	" Kimball Building Trust (90%),	67,500.00	
700	" American Tel. & Tel. Co.,	70,000.00	
2,500	rights " " "	12,718.13	
Estate Nos. 13 & 14 Haymarket Square, Boston,		36,000.00	
Improvements on Adams Estate,		33,380.02	
" " Gray Estate,		30,053.27	
Advances to Bussey Real Estate,		75.00	
" Calvin and Lucy Ellis Real Estate,		5.54	
" Harvard Dining Association,		3,700.98	
" Cowdin Real Estate,		12.00	
" Randall Hall Association,		1,000.00	
Invested in notes,		1,334.000.00	
	Amounts carried forward,	$2,905,205.57	$2,269,373.03

INCOME (*continued*).

Amounts brought forward,		$801,798.52	$718,268.57
Receipts from Students (*continued*).			
Library fines.			
Library,	$393.03		
Divinity School,	7.95		
Dental School,	.36	401.34	
Care of patients in **Stillman** Infirmary,		6,588.76	
Use of Microscopes.			
Medical School,	$783.00		
Dental School,	99.00	882.00	
Use of lockers, Hemenway Gymnasium,		3,478.00	
Summer Camp, engineering,		10,086.40	823,235.02
Sundries.			
Professorship of Hygiene, from Trustees,		$1,119.54	
Asa Gray's copyrights,		829.14	
Trustee of **George H. Emerson** estate,		1,000.00	
Trustee of **C. L. Hancock** real estate,		1,248.78	
Trustees of **Edward Hopkins**,		206.32	
Sale of grass, wood, old material, &c.,		3,607.31	
" old examination papers,		442.62	
" tickets to Commencement Dinner,		678.00	
" tickets to Divinity School Alumni Dinner,		42.00	
" books, pamphlets, catalogues, &c.,		5,424.61	
" time signals,		36.83	
Board of horses, cattle, &c., at **Bussey** Institution,		4,905.26	
Use of Library by resident graduates and others,		110.00	
" Gymnasium by graduates and others,		112.29	
" Buildings (not Univ. Houses and Lands),		6,758.71	
Fees in Infirmary, Dental School,		4,403.00	
Mary L. Whitney Scholarship, from the Executor of the will of **C. L. B. Whitney**,		111.50	31,085.91
Sundry Gifts for immediate use (see page 24),			875,575.21
Total amount of income,			$2,448,114.71

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

Arnold Arboretum Fund (additional),	$1,065.00	
Robert Bacon Fund (additional),	60,000.00	
Joseph Baker Fund (additional),	7,400.00	
Band Music Fund,	1,143.00	
Robert Charles Billings Fund (Arnold Arboretum),	12,500.00	
Robert Charles Billings Fund (Divinity School),	2,500.00	
Francis Boott Fund,	10,000.00	
Amounts carried forward,	$94,608.00	$2,448,114.71

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amounts brought forward, . .	$2,905,205.57	$2,269,373.03
GENERAL INVESTMENTS (*continued*).		
Accrued interest and expenses on bonds and notes bought, ...	5,401.39	2,910,606.96
Special deposits repaid, ...		2,625.00
SPECIAL INVESTMENTS.		
Price Greenleaf Fund.		
Invested in notes, ...		100,000.00
Charles L. Hancock Fund.		
Deed of real estate, ...		10.50
Robert Troup Paine Fund.		
$4,000 Massachusetts 3½'s of 1935, ...		4,240.00
Woodland Hill Fund.		
Building for the Laboratory of Comparative Pathology, on account,		14,736.84
Property received for the **Robert Charles Billings** Fund (**Arnold** Arboretum).		
$5,000 Butte Water Co. 1st M. 5's of 1921, ...		4,000.00
Property received for the Riverside Fund.		
6 shares Harvard Riverside Associates stock, ...		6,000.00
Unsold property received for the **Henry S. Nourse** Fund.		
32 shares American Sugar Refining Co., ...	$3,936.00	
25 " Brookside Mills, ...	2,500.00	
30 " Lanett Cotton Mills, ...	3,000.00	
40 " Missouri Zinc Fields Co., ...	120.00	
80 " The National Land and Improvement Co. of Colorado, ...	1.00	
21 " Pennsylvania Steel Co., preferred, . . .	1,260.00	
3 " " " " common, . . .	3.00	
15 " Western Tel. & Tel. Co., preferred, . .	1,320.00	
45 " " " " common, . .	540.00	
Mortgage notes, ...	12.800.00	25,480.00
Henry S. Nourse Fund.		
Mortgage notes, ...		1,100.00
Property received for the **Arthur T. Lyman** Fund.		
$25,000 Note of Boston Manufacturing Co., ...		25,000.00
Property received on account of **George Smith's** Bequest.		
$13,000 Citizens Street Railway Co., Shelby County, Tenn., Gold 6's of 1916, ...	$14,369.33	
Amounts carried forward, ...	$14,369.33	$5,363,172.33

General Statement of Receipts and Disbursements for the year ending

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amounts brought forward, . . .	$94,608.00	$2,448,114.71
GIFTS FOR CAPITAL ACCOUNT (*continued*).		
Borden Scholarship Fund (additional), ...	170.00	
Dental School Endowment (additional), ...	10.00	
Fund for the Advancement of Astronomical Science (1902) (additional), ...	1,500.00	
Fund of the **Class of 1856**, ...	7,500.00	
Asa Gray Memorial Fund (additional), ...	100.00	
F. B. Greenough Fund for Surgical Research (additional), ...	300.00	
George Silsbee and **Ellen Sever Hale** Fund, . .	5,000.00	
Lectures on Political Economy Fund (additional), . .	35.00	
Arthur T. Lyman Fund, ...	25,000.00	
Musical Department Fund, ...	1,003.40	
Henry S. Nourse Fund, ...	44,671.45	
Joseph Pearson Oliver Scholarship Fund, . . .	8,500.00	
The Philadelphia Scholarship Fund, ...	10,100.00	
Riverside Fund, ...	6,000.00	
John D. Rockefeller Gift (additional), ...	163,791.13	
George Smith Bequest, ...	257,550.66	
Swift Scholarship Fund (additional), ...	1,000.00	
David Ames Wells Fund (additional), ...	944.41	
Jerome Wheelock Fund, ...	10.00	
Mary L. Whitney Scholarship Fund (additional), .	1,194.50	
Josiah Dwight Whitney Fund, ...	5,000.00	633,988.55
SALES, ETC., GENERAL INVESTMENTS.		
$32,200 Burl. & Mo. River (Neb.) R. R. non. ex. 6's, called and paid off at par, ...	$32,200.00	
24,000 Eastern R. R. 6's of 1906, ...	25,272.00	
26,000 Fort Scott, South Eastern & Memphis R. R. 1st M. 7's, called and paid off at 105, . . .	27,300.00	
9,000 Long Island R. R. Ref. M. 4's of 1949, . . .	8,550.00	
25,000 Long Island R. R. Ref. M. 4's of 1949, profit on Syndicate purchase and sale, ...	596.53	
10,000 Philadelphia, Baltimore & Washington R. R. 1st M. 4's of 1943, ...	10,100.00	
25,000 Philadelphia, Baltimore & Washington 1st M. 4's of 1943, profit on Syndicate purchase and sale, ...	596.52	
7,000 Pennsylvania Company 3½'s of 1916, called and paid off at par, ...	7,000.00	
Hayward Estate, Washington St., Boston, ...	586,361.88	
Notes paid, ...	1,659,000.00	2,356,976.93
Amount carried forward, ...		$5,439,080.19

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

	Amounts brought forward, ...	$14,369.33	$5,363,172.33

SPECIAL INVESTMENTS (*continued*).

George Smith's Bequest (*continued*).

$4,000	City of Commerce, Texas, Permanent Improvement 6's of 1921, ...	4,021.33	
10,000	Du Quoin, Ill., Water Works Co. 6's of 1901,	1.00	
17,000	City of Ennis, Texas, Bridge & Street Improvement 6's of 1935, ...	17,090.67	
3,000	Grand River Township, Cass County, Missouri, Funding 5's of 1917, ...	3,075.83	
11,000	Jones County, Texas, Ref. Court House 5's of 1937, ...	10,622.63	
20,000	Laclede Gas Light Co. 5's of 1919, ...	20,000.00	
4,000	Lampasas County, Texas, Bridge 5's of 1910, .	4,062.78	
500	City of Whitewright, Texas, Permanent Improvement 6's of 1914, ...	500.17	
32,000	United States Steel Corporation 5's of 1963, . .	24,000.00	
315	shares Boatmen's Bank of St. Louis, ...	70,875.00	
200	" Laclede Gas Light Co., preferred, . . .	18,800.00	
480	" United States Steel Corporation, preferred,	26,400.00	213,818.74

Amount carried forward, ...		$5,576,991.07

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amount brought forward, ...		$5,439,080.19
SALES, ETC., SPECIAL INVESTMENTS.		
Sale of Investments of **Price Greenleaf** Fund.		
Notes paid, ...		100,000.00
Sale of Investment of **John Cowdin** Fund.		
Cowdin Estate, Haymarket Square, Boston, . . .	$36,000.00	
Less advances, repaid, ...	2,164.94	33,835.06
Note held for **James Barr Ames** Prize Fund, paid in part, . .		250.00
SUNDRIES.		
Harvard Dining Association, to reduce debt, ...	$2,050.00	
Randall Hall Association, to reduce debt, ...	1,500.00	
Premiums on Bonds, repaid in part, ...	11,142.58	
Advances for accrued interest and expenses on bonds and notes, repaid, ...	5,116.66	
Advances to **Cowdin** Estate, repaid, ...	2,164.94	
Improvements on **Adams** Estate, repaid in part, . . .	1,669.00	
" " **Gray** Estate, repaid in part, ...	2,669.51	
" " **Bussey** Real Estate, repaid in part,	5,641.30	
Loans to Students, repaid, ...	4,179.87	
Sundry repayments, ...	4,599.33	
Special deposit, ...	500.00	41,233.19

Bursar's Sundry Accounts.		
Receipts during the year.		
On account of **Harvard** Dining Association, .	$223,947.16	
" **Randall** Hall Association, . .	86,282.08	
On Sundry accounts, ...	184,369.82	494,599.06
Balance, August 1, 1903.		
Cash in Adams Trust Co., ...	$47,260.22	
" City Trust Co., ...	3,557.44	
" Old Boston National Bank, ...	13,922.86	
" National Union Bank, ...	62,090.35	
Term Bills due in October, 1903, ...	241,773.03	
" overdue, ...	10,147.50	
Cash in hands of Charles F. Mason, Bursar, . . .	21,508.17	400,259.57
Total, ...		$6,509,257.07

of the Treasurer of Harvard College,
July 31, 1904.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward,		$5,576.991.07
Bursar's Sundry Accounts.		
Payments during the year.		
On account of Harvard Dining Association,	$224,119.50	
" Randall Hall Association,	88,272.68	
On sundry accounts,	191,647.57	504,039.75
Balance, July 31, 1904.		
Cash in Adams Trust Co.,	$10,478.31	
" City Trust Co.,	4,392.91	
" Equitable Trust Co.,	105,938.41	
" Old Boston National Bank,	4,253.87	
" National Union Bank,	15,413.69	
Term Bills due in October, 1904,	249,422.71	
" overdue,	8,870.39	
Cash in hands of Charles F. Mason, Bursar,	29,455.96	428,226.25
Total,		$6,509,257.07

The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1904.

Separate Investments, as stated in detail on pages 3, 4, 5, 6, and 7 of this report, consisting of			
	Railroad Bonds,	$327,749.23	
	Sundry Bonds,	446,207.10	
	Railroad Stocks,	327,035.59	
	Real Estate Trust Stocks,	30,703.75	
	Sundry Stocks,	144,305.00	
	University Houses and Lands,	519,337.04	
	Bussey Real Estate,	392,710.18	
	Other Real Estate,	137,952.64	
	Mortgages and Notes,	178,150.00	
	Deposits in Massachusetts Hospital Life Ins. Co.,	21,225.00	
	Cash in City Trust Co.,	4,392.91	$2,529,768.44
And "General Investments," as follows: —			
Mortgages and Notes.			
	Mortgages,	$400,000.00	
	Boston Manufacturing Co.'s Notes,	50,000.00	
	Boott Cotton Mills' Note,	100,000.00	
	Cocheco Manufacturing Co.'s Notes,	100,000.00	
	Fitchburg R. R. Co.'s Note,	100,000.00	
	Manchester Cotton Mills' Note,	50,000.00	
	Merchants & Miners Transportation Co.'s Notes,	25,000.00	
	Merrimack Manufacturing Co.'s Notes,	100,000.00	
	Personal Notes, with collateral,	409,000.00	1,334,000.00
Railroad Bonds.			
$100,000	Baltimore & Ohio 1st M. 4's of 1948,	$96,625.00	
100,000	Baltimore & Ohio (S. W. Division) 1st M. 3½'s of 1925,	89,750.00	
100,000	Baltimore & Ohio (Pittsburg, Lake Erie & West Virginia System) Ref. M. 4's of 1941,	99,250.00	
125,000	Bangor & Aroostook Cons. Ref. M. 4's of 1951,	118,750.00	
100,000	Boston & Northern Street R'y 1st M. Ref. 4's of 1954,	94,000.00	
234,600	Burl. & Mo. R. in Nebr. non ex. 6's,	235,816.46	
100,000	Chicago & Alton 4% Coll. Notes of 1907,	98,350.00	
444,000	Chicago, Burl. & Quincy 3½'s of 1949,	457,328.69	
200,000	Chicago, Burl. & Quincy (Illinois Division) 4's of 1949,	201,000.00	
100,000	Chicago & No. Western Gen. M. 3½'s of 1987,	100,982.57	
100,000	Chicago & No. Western (Madison Extension) 1st M. 7's of 1911,	111,829.29	
	Amounts carried forward,	$1,703,682.01	$3,863,768.44

	Amounts brought forward,	$1,703,682.01	$3,863,768.44
Railroad Bonds (*continued*).			
$100,000	Chicago, Rock Island & Pacific Gen. M. 4's of 1988,	106,604.78	
100,000	Chicago Terminal Transfer 1st M. 4's of 1947,	95,772.50	
154,500	Eastern, 1st M. 6's of 1906,	154,314.58	
£19,600	" " " Sterling of 1906,	95,383.40	
$25,000	Fort Scott, So. E. & Mem. 1st M. 7's,	22,358.69	
100,000	Indiana, Ill. & Iowa 1st M. 4's of 1950,	96,500.00	
142,000	Kansas City, Fort Scott & Memphis Cons. M. 6's of 1928,	173,544.83	
114,000	Kansas City, Memphis & Birmingham (assented) Income 5's of 1934,	103,500.00	
100,000	Lake Shore & Michigan Southern Deb. 4's of 1928,	95,000.00	
300,000	Long Island Unified M. 4's of 1949,	283,257.50	
200,000	Louisville & Jeffersonville Bridge Co. 1st M 4's of 1945,	191,000.00	
100,000	Massachusetts Electric Companies 4½% Gold Coupon Notes of 1906,	98,000.00	
100,000	Metrop. West Side Elevated 4's of 1938,	91,746.25	
100,000	" " " Ext. M. 4's of 1938,	97,000.00	
100,000	Minneapolis Union 1st M. 5's of 1922,	102,396.98	
100,000	Missouri Pacific 5% Notes of 1906,	99,000.00	
300,000	New York Central & H. R. (L. S. & M. S. Coll.) 3½'s of 1998,	295,964.40	
200,000	New York, Ontario & Western Ref. M. 4's of 1992,	210,196.32	
343,000	Northern Pacific-Great Northern Joint 4's (C. B. & Q. Coll.) of 1921,	164,325.92	
100,000	Old Colony Street R'y 1st M. Ref. 4's of 1954,	94,000.00	
100,000	Oregon Short Line Cons. 1st M. 5's of 1946,	117,512.56	
90,000	Pennsylvania Co. 3½'s of 1916,	87,875.00	
100,000	Pennsylvania Co. Coll. Tr. 4½% Notes of 1905,	99,843.75	
100,000	Rutland Car Trust 4½'s of 1905,	100,270.00	
100,000	Schenectady 1st M. 4½'s of 1941,	104,807.69	
100,000	St. Louis & San Francisco Ref. M. 4's of 1951,	97,125.00	
100,000	Second Ave. (N. Y.) Con. M. 5's of 1948,	117,368.56	
200,000	Terminal R. R. Association of St. Louis Gen M. Ref. 4's of 1953,	200,000.00	
200,000	Third Avenue (N. Y.) 1st Consol. M. 4's of 2000,	202,357.72	
400,000	Union Pacific 1st M. & L. G. 4's of 1947,	353,114.75	5,853,823.19
	Amount carried forward,		$9,717,591.63

	Amount brought forward, ...		$9,717,591.63
Sundry Bonds.			
$200,000	American Bell Tel. Co. 4's of 1908, . .	$202,033.30	
200,000	American Tel. & Tel. Co. 4's of 1929, .	196,000.00	
200,000	American Tel. & Tel. Co. 5% Gold Coupon Notes of 1907, ...	198,000.00	
145,000	Broadway Realty Co. Purchase money 1st M. 5's of 1926, ...	155,884.27	
100,000	Chicago Edison Co. 1st M. 5's of 1926, .	106,388.80	
250,000	Chicago Junction Railways and Union Stock Yards Coll. Trust 5's of 1915, .	250,221.60	
100,000	Chicago Junction Railways and Union Stock Yards 4's of 1940, ...	98,500.00	
100,000	Metrop. Tel. & Tel. Co. 1st M. 5's of 1918,	99,500.00	
100,000	Montreal Light, Heat and Power Co. 1st M. Coll. Tr. 4½'s of 1932, ...	100,916.65	
100,000	Municipal Gas & Electric Co. of Rochester, N. Y., 1st M. 4½'s of 1942, . . .	100,000.00	
100,000	New England Tel. & Tel. Co. 6's of 1906,	100,593.72	
100,000	" " " 5's of 1916,	111,294.10	
110,000	St. Louis National Stock Yards Co. 1st M. 4's of 1930, ...	108,650.00	1,827,982.44
Railroad Stocks.			
500 shares	Chicago & No. Western, common, .	$82,562.50	
700 "	Manhattan, ...	92,762.50	
1225 "	N. Y. Central & Hud. River, ...	64,674.87	
1000 "	New York, New Haven & Hartford, .	188,437.50	
5771 "	Pennsylvania, ...	376,937.80	805,375.17
Manufacturing and Telephone Stocks.			
12 shares	Amoskeag Manufacturing Co., . . .	$3,654.00	
187 "	Merrimack " " . . .	18,615.10	
24 "	Pacific Mills, ...	16,668.29	
1700 "	American Tel. & Tel. Co., ...	238,125.38	277,062.77
Real Estate Trust Stocks.			
1000 shares	Barristers Hall Trust, ...	$92,766.00	
2500 "	Department Store Trust, ...	220,291.88	
1000 "	Essex Street Trust, ...	100,000.00	
750 "	Kimball Building Trust, ...	75,000.00	
1089 "	Paddock Building Trust, ...	104,363.72	
1000 "	Post Office Square Building Trust, .	103,000.00	695,421.60
Real Estate.			
	Adams Estate, Washington Street, Boston, . . .	$281,711.02	
	Amory Estate, Franklin Street, Boston, ...	165,615.81	
	Cowdin Estate, Haymarket Square, Boston, . .	36,000.00	
	Estate, 20 and 21 Haymarket Square, Boston, . .	58,913.52	
	Gerrish Block, Blackstone and North Streets, Boston, ...	192,875.75	
	Amounts carried forward, . .	$735,116.10	$13,323,433.61

Amounts brought forward, . . .	$735,116.10	$13,323,438.61
Real Estate *(continued)*.		
Gray Estate, Washington Street, Boston, ...	896,428.27	
Lowell Estate, Washington Street, Boston, . . .	464,368.91	
Townsend Estate, Hawkins Street, Boston, . . .	44,569.49	
Webb Estate, Washington Street, Boston, . . .	164,604.79	2,305,087.56
Sundries.		
Advances to **Bussey** Trust, ...	$53,501.81	
" **Calvin & Lucy Ellis** Real Estate,	5.54	
" Medical School Undertaking, . . .	496,101.77	
" Observatory, ...	5,453.52	
" **Peabody** Museum of American Archaeology and Ethnology, . .	2,041.66	
" Botanic Department, ...	7,261.09	
" **Harvard** Dining Association, . .	45,990.14	
" **Randall** Hall Association, ...	33,202.27	
" Classical Publication Fund of the Class of 1856, ...	1,177.12	
" Stadium, ...	57,932.73	
" Sundry Accounts, ...	730.94	
	$703,398.59	
Term bills due in October, 1904, ...	249,422.71	
" overdue, ...	8,870.39	961,691.69
Cash in Adams Trust Co., ...	$10,478.31	
" Equitable Trust Co., ...	105,938.41	
" National Union Bank, ...	15,413.69	
" Old Boston National Bank, ...	4,253.87	
" hands of Charles F. Mason, Bursar, . . .	29,455.96	165,540.24
Total, ...		$16,755,758.10

The foregoing Property represents the following Funds and Balances, and is answerable for the same.*

Principal, Aug. 1, 1903.	UNIVERSITY FUNDS.	Principal, July 31, 1904.
	Band Music (1903), ...	$1,143.00
$4,950.00	**Andrew Bigelow** (1898), ...	4,950.00
5,000.00	**Stanton Blake** (1899)	5,000.00
4,771.33	**Charlotte F Blanchard** (1891), .	4,771.33
5,250.00	**Samuel D. Bradford** (1866), . .	5,250.00
12,500.00	**John W Carter** (1898), ...	12,500.00
154.72	**Thomas Cotton** (1727), ...	154.86
22,000.00	**John Cowdin** (1888)	33,835.06
115,966.56	**George B. Dorr** (1882), ...	115,966.56
48,458.50	**George Draper** (1892), ...	48,458.50
56,787.00	**R. H. Eddy** (1901)	56,787.00
101,225.49	**Harvard Ellis** (1895), ...	101,225.49
5,322.09	**John Davis Williams French** (1901),	5,322.09
20,571.18	**Gore** (1834), ...	20,571.18
25,000.00	**John C. Gray** (1881), ...	25,000.00
20,000.00	**Walter Hastings** (1888), ...	20,000.00
5,000.00	**George Baxter Hyde** (1895), . .	5,000.00
91,885.23	Insurance and Guaranty (1860), . . .	61,142.17
16,871.63	**Leonard Jarvis** (1859)	16,871.63
10,000.00	**Henry P Kidder** (1894), ...	10,000.00
10,000.00	**Joseph Lee** (1802), ...	10,000.00
10,000.00	**Theodore Lyman** (1898), ...	10,000.00
81,950.54	**Henry T Morgan** (1883), ...	81,950.54
15,750.00	**Israel Munson** (1844)	15,750.00
	Henry S. Nourse (1904), ...	45,105.94
113,817.44	**Francis E Parker** (1886), ...	113,817.44
30,000.00	**William Perkins** (1888), ...	30,000.00
50,475.41	**Henry L. Pierce** (1898), ...	50,467.79
205,474.96	**Henry L. Pierce** (Residuary) (1898),	
	Total received, $798,000.00	
	Appropriated for Pierce Hall, ... $242,525.04	
	Appropriated for the Medical School Undertaking, 350,000.00	
	$592,525.04	205,474.96
63,598.41	President's (1883), ...	63,652.19
366,416.47	Retiring Allowance (1879), ...	366,416.47
	Riverside (1903), ...	6,000.00
23,370.03	**John L. Russell** (1889), ...	23,370.03
1,902.61	**Mary R. Searle** (1903), ...	1,930.18
46,913.13	**Isaac Sweetser** (1894), ...	46,913.13
5,000.00	**Seth Turner** (1883)	5,000.00
50,000.00	**Henry Villard** (1902), ...	50,000.00
100,000.00	**William F. Weld** (1893), ...	100,000.00
$1,746,382.73	. . Amounts carried forward, ...	$1,779,797.54

---

* The dates of the establishment of the Funds are printed after their titles.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$1,746,382.73	. . Amounts brought forward, ...		$1,779,797.54
	*COLLEGE FUNDS.		
9,363.26	**John W. P. Abbot** (1874), . . .	$9,809.88	
27,748.64	**Alford** Professorship (1765), . . .	27,748.64	
6,230.00	**Daniel Austin** (1879) . . .	6,230.00	
15,000.00	**Robert Charles Billings,** for **Gray** Herbarium (1903), ...	15,000.00	
1,050.00	**John A. Blanchard** (1873), . .	1,050.00	
39,780.00	Botanic Department (1880) . . .	39,780.00	
28,337.40	**Boylston** Professorship (1772), . .	28,337.40	
11,224.29	**Francis James Child** Mem (1897),	11,280.77	
7,105.12	Classical Publ. F'd of **Class of 1856** (1888	7,105.12	
150,445.04	Class Subscription (1870), ...	150,445.04	
465.43	Cryptogamic Herbarium (balance), .	939.81	
58,245.94	**T. Jefferson Coolidge,** for Research in Physics, ...	58,568.65	
3,459.71	**Paul Dudley** 751), ...	3,524.75	
101,414.59	**Eaton** Professorship (1903), . . .	104,002.11	
21,619.50	**Eliot** Professorship (1814), ...	21,619.50	
10,000.00	**Eliot** " **(Jon. Phillips'** gift)(1854), ...	10,000.00	
3,500.01	**Erving** Professorship (1791), . . .	3,500.01	
35,990.99	**Fisher** " (1834), . . .	35,990.99	
412.46	**Henry Flynt** (1760), ...	413.67	
16,240.38	Fund for Permanent Tutors (1796), .	16,240.38	
1,033.57	Fund for Religious Services (1887), .	1,033.57	
12,229.57	**Godkin** Lecture (1903), ...	12,812.94	
6,472.42	Gospel Church 1868)	6,626.77	
1,900.48	**Gray** Herbarium (balance), ...	939.77	
32,511.00	**Asa Gray** Memorial (1898), . . .	32,611.00	
21,595.16	**Asa Gray** Professorship of Systematic Botany (1897), ...	21,614.47	
195,417.71	**Gurney** 1888), ...	195,739.15	
	George Silsbee and **Ellen Sever Hale** (1904), ...	5,039.73	
15,066.80	**Harvard** Oriental Series (1899), . .	15,000.00	
20,655.91	Herbarium (1865), ...	20,655.91	
20,217.08	**Hersey** Professorship (1772), . . .	20,217.08	
21,744.18	**Hersey** Professorship **(Thomas Lee's** gift) (1856)	21,744.18	
34,517.60	**Hollis** Professorship of Divinity (1726),	34,517.60	
3,747.33	**Hollis** " of Mathematics (1718),	3,747.33	
5,940.70	**Ingersoll** Lecture (1894), ...	6,024.09	
2,177.53	**Jefferson** Physical Lab'y (balance),	1,748.50	
10,541.32	Lectures on Political Economy (1889),	10,664.75	
$2,699,783.85	. . Amounts carried forward, . . .	$962,323.56	$1,779,797.54

* Including some actually used in the Graduate School.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$2,699,783.85	. . Amounts brought forward, . . .	$962,323.56	$1,779,797.54
15,796.97	**Lee** Fund for Reading (1863), . . .	15,796.97	
108,344.19	**Henry Lee** Professorship (1900), .	109,012.20	
7,968.32	**Joseph Lovering** (1891), ...	7,916.49	
66,407.31	**Lowell** Fund for a Botanic Garden (1882) (formerly Professorship of Natural History 1805), ...	66,407.31	
	Arthur T Lyman (1904), . . .	25,000.00	
43,062.93	**McLean** Professorship 1834), . .	43,062.93	
	Music Department (1903) . . .	1,049.29	
22,626.20	**William B. Noble** Lectures (1898),	23,706.46	
14,129.13	**Daniel H. Peirce** (1876), ...	14,196.53	
21,000.00	**Perkins** Professorship (1841), . .	21,000.00	
31,500.00	**Jonathan Phillips** (1861), . . .	31,500.00	
75,000.00	Physical Laboratory Endowm't (1881),	75,000.00	
25,020.19	**Plummer** Professorship (1854), . .	25,020.19	
52,500.00	**Pope** " (1868), . .	52,500.00	
219,858.24	Professorship of Hygiene (1899), . .	224,854.37	
510,000.00	**Nelson Robinson, Jr** 1899), .	515,376.50	
56,368.73	**Rumford** Professorship (1819), . .	56,368.73	
2,000.00	**John L. Russell** (1889)	2,000.00	
60,000.00	**Gurdon Saltonstall** 1901), . .	60,000.00	
4,425.01	**George William Sawin** (1890),	4,536.64	
	Schol. & Benef money returned (bal.),	683.34	
62.30	**Barthold Schlesinger** (1901), .	30.58	
23,139.83	**Smith** Professorship (1816), . . .	23,139.83	
12,811.14	**Josiah Stickney** (1899), ...	13,284.22	
16,483.68	**John E. Thayer** (1885), ...	16,465.04	
1,193.45	**Elizabeth Torrey** (1896), . . .	1,107.04	
11,142.38	**Henry Warren Torrey** (1890), .	11,265.14	
100,918.75	**Unknown** Memorial (1898), . . .	101,179.70	
40,000.00	**Wales** Professorship (1903), . . .	40,000.00	
15,500.00	**Samuel Ward** (1680), ...	15,500.00	
6,577.94	**Cyrus M. Warren** (1893), . . .	6,426.78	
121,229.30	**Henry C. Warren** (1899), . . .	120,336.57	
5,594.24	**Sylvester Waterhouse** (1896), .	5,861.07	
50,000.00	**Increase S. Wheeler** (1889), . .	50,000.00	
	Jerome Wheelock (1903), . . .	10.38	
989.59	**Chauncey Wright** (1884), . . .	1,027.50	
	Gifts for Books, Prints, Casts, etc., for Dept. of Architec. (bal.),	4,375.33	
1,436.91	" Cases, etc. at Botanic Garden (balance)	1,427.08	
174.61	" Classical Library (balance),	188.17	
322.52	" Collections for a Germanic Museum (balance) .	322.52	
1,770.30	" Engineering Department, Electrical Apparatus (bal.), .	.13	
$4,445,138.01	. . Amounts carried forward, . . .	$2,749,258.59	$1,779,797.54

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$4,445,138.01	Amounts brought forward,	$2,749,258.59	$1,779,797.54
2,511.78	Gifts for The Ethics of the Social Questions (bal.),	3,437.15	
39.15	" Physical Research (bal),	12.65	
3,787.39	" Plantation of Shrubs, etc. "	3,556.96	
1,516.95	" Salaries (balance)	1,500.00	
29.57	" Sanskrit Department (bal.),	182.28	
12,940.82	" Semitic Collection (balance),	6,972.12	
1,009.41	" " Library, "	870.09	
990.47	" Sugar-cane investigation, etc. balance	903.67	
1,971.53	Sundry Gifts (unexpended balances),	3,647.18	
	FELLOWSHIP FUNDS.		
	Cercle Français de l'Université **Harvard** (balance)	100.00	
5,048.77	**George Wales Dillaway** (1903),	5,289.61	
11,231.65	**Ozias Goodwin** Memorial (1889),	11,317.42	
10,844.02	**Harris** (1868),	10,861.28	
300.00	Indic Philology (balance),		
10,989.24	**John Thornton Kirkland** (1871),	11,063.42	
11,630.71	**Henry Lee** Memorial (1889),	11,510.51	
14,400.00	**Charles Eliot Norton** (1901),	14,100.00	
12,748.44	**Robert Treat Paine** (1887),	12,856.52	
57,079.66	**John Parker** (1873),	57,352.37	
32,729.83	**Rogers** 869 ,	32,478.55	
11,472.24	**Henry Bromfield Rogers** Memorial (1889),	11,569.45	
12,359.62	**John Tyndall** (1885),	11,824.19	
11,433.55	**James Walker** (1881),	11,228.95	
22,804.82	**Whiting** (1896),	23,092.62	
	SCHOLARSHIP FUNDS.		
3,799.62	**Abbot** (1852),	3,780.88	
1,978.26	**Alford** (1785),	2,072.61	
5,378.67	**Bartlett** (1881),	5,385.24	
5,699.90	**Bassett** (1876),	5,701.79	
13,066.40	**Bigelow** (1865),	13,106.30	
2,302.87	**Borden** (1896	2,588.78	
113,573.22	**Bowditch** (1864),	113,740.63	
2,896.39	**Bright** (balance ,	3,160.37	
3,859.97	**Browne** (1687)	3,894.09	
5,204.74	**Morey Willard Buckminster** (1898),	5,253.01	
33,180.83	**Burr** (1895),	33,563.56	
6,119.53	**Ruluff S. Choate** (1884),	6,136.45	
8,272.97	**Class of 1802** (1870),	8,342.59	
3,184.65	" **1814** (1853),	3,211.57	
6,523.99	" **1815 (Kirkland)** (1852),	6,668.52	
$4,910,119.64	Amounts carried forward,	$3,211,591.92	$1,779,797.54

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$4,910,119.64	. . Amounts brought forward, . . .	$3,211,591.92	$1,779,797.54
4,544.13	Class of 1817 (1852), ...	4,644.21	
3,487.81	" 1828 (1882), ...	3,554.29	
4,909.23	" 1835 (1853), ...	5,026.73	
5,107.64	" 1841 (1871), ...	5,151.29	
5,106.56	" 1852 (Dana) (1876), . .	5,150.16	
15,735.39	" 1856 (1885), ...	15,785.95	
4,713.37	" 1867 (1886), ...	4,763.18	
5,065.40	" 1877 (1902), ...	5,107.00	
5,362.00	" 1883 (1900), ...	5,429.27	
11,882.97	Crowninshield (1877), ...	12,074.78	
600.00	W. H. Cudworth (balance), . .	700.00	
5,679.28	Francis H. Cummings (1898), .	5,750.17	
5,539.65	Geo and Martha Derby (1881),	5,637.25	
5,027.63	Julius Dexter (1892), ...	5,092.47	
2,785.68	O. W Doe (1893	2,818.57	
	Department of Education (balance),	500.00	
5,486.91	W S. Eliot 1875), ...	5,498.64	
40,856.94	Joseph Eveleth (1896), ...	41,059.15	
2,145.96	Fall River 1893), ...	2,194.98	
6,260.20	Farrar 1873), ...	6,308.80	
11,383.56	Richard Augustine Gambrill (1890), ...	11,476.58	
7,618.47	Charles Haven Goodwin (1889),	7,681.85	
4,237.92	Greene (1863)	4,340.07	
	Harvard Club of Buffalo (balance),	66.66	
10,088.96	John Appleton Haven (1902), .	10,170.20	
23,630.46	William Hilton 1897), ...	24,022.61	
10,750.03	Ebenezer Rockwood Hoar (1895),	10,862.80	
6,290.90	Levina Hoar (1876), ...	6,340.98	
13,614.36	Hodges (1878), ...	13,647.27	
6,223.66	Hollis (1722), ...	6,295.54	
10,878.04	Henry B. Humphrey (1890), . .	10,871.92	
30,455.23	C. L. Jones 1901), ...	30,774.59	
10,340.27	G. E. Lowell (1886), ...	10,433.49	
5,117.00	Markoe (1903), ...	5,211.08	
2,728.51	Matthews (balance), ...	2,768.78	
6,107.08	Merrick (1888), ...	6,173.38	
8,240.47	Morey (1868)	8,308.52	
5,773.89	Lady Mowlson (1643), ...	5,824.31	
5,610.33	Howard Gardner Nichols (1897),	5,744.59	
5,498.25	Lucy Osgood (1873), ...	5,760.50	
4,950.00	George Foster Peabody (1902),	5,007.16	
6,230.81	Pennoyer (1670), ...	6,453.02	
4,303.59	Perkins (1869), ...	4,358.89	
	Philadelphia (1904), ...	10,260.61	
1,527.41	Wendell Phillips Mem'l (1895),	1,533.59	
350.00	Ricardo Prize (balance), ...	350.00	
$5,252,365.59	. . Amounts carried forward, . . .	$3,568,577.80	$1,779,797.54

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$5,252,365.59	. . Amounts brought forward, . . .	$3,568,577.80	$1,779,797.54
1,111.32	Rodger (1883), ...	1,164.81	
3,484.14	Henry B. Rogers (1859), ...	3,500.33	
5,708.07	Edward Russell (1877), ...	5,755.34	
5,603.57	Sales (1893), ...	5,637.54	
11,107.39	Saltonstall (1739), ...	11,212.19	
8,474.56	Leverett Saltonstall (1895), . .	8,553.82	
6,894.99	Mary Saltonstall (1730), ...	6,923.88	
3,291.31	Sever (1868), ...	3,298.29	
10,914.65	Sewall (1696), ...	11,035.30	
49,224.51	Shattuck (1854), ...	49,272.54	
6,029.85	Slade (1877), ...	6,150.82	
4,700.00	Dunlap Smith (1903), ...	4,766.66	
4,473.47	Story (1864)	4,511.83	
2,796.64	Stoughton (1701), ...	2,873.28	
2,394.80	Swift (1899), ...	3,534.85	
78,380.23	Thayer (1857), ...	79,008.96	
4,205.37	Gorham Thomas (1865), ...	4,255.95	
7,640.47	Toppan (1868), ...	7,704.90	
25,640.54	Townsend (1861), ...	25,613.61	
4,848.13	Walcott (1855), ...	4,946.04	
10,514.35	Christopher M. Weld (1899), .	10,615.87	
5,318.66	Jacob Wendell (1899), ...	5,372.38	
11,667.45	Whiting (1874), ...	11,773.96	
	Josiah Dwight Whitney (1904),	5,000.00	
7,901.91	Mary L. Whitney (1903), . . .	9,315.70	
	BENEFICIARY AND LOAN FUNDS.		
50,403.46	Rebecca C. Ames (1903), . . .	50,522.68	
549.35	Nathaniel Appleton (1772), . .	575.54	
1,764.82	Frank Bolles Memorial (1894), .	1,814.01	
1,506.54	William Brattle (1717), ...	1,578.42	
980.94	Thomas Danforth (1724), . . .	1,027.73	
5,448.73	Moses Day (1880), ...	5,448.73	
392.38	John Ellery (1738), ...	411.08	
1,333.34	Exhibitions (1796), ...	1,333.34	
735.80	Thomas Fitch (1737), ...	770.91	
422.96	Ephraim Flynt (1723), ...	443.14	
147.05	Henry Flynt (1760)	154.06	
439.72	Henry Gibbs (1722), ...	460.71	
2,912.79	John Glover (1653), ...	3,051.74	
10,321.53	Price Greenleaf Aid (balance), .	12,089.09	
342.80	Edward Holyoke (1743), . . .	359.16	
2,330.26	Robert Keayne (1659)	2,441.40	
25,195.02	Bertram Kimball (1903), . . .	26,192.50	
964.39	Mary Lindall (1812), ...	1,010.37	
5,716.22	Susan B. Lyman (1899), ...	5,988.87	
206.00	Anne Mills (1725), ...	215.83	
$5,646,806.07	. . Amounts carried forward, . . .	$3,976,265.46	$1,779,797.54

Principal, Aug 1, 1903.		Principal, July 31, 1904.	
$5,646,806.07	. . Amounts brought forward, . . .	$3,976,265.46	$1,779,797.54
10,855.32	**Munroe** (1880), ...	10,906.81	
2,022.09	**Palfrey** Exhibition (1821), ...	2,038.54	
4,617.36	**Dr A. P Peabody** Memorial (1896),	4,722.59	
196.17	**Joseph Sewall** (1765), ...	205.52	
14,540.68	**Alexander W. Thayer** (1899), .	14,754.29	
11,155.10	**Quincy Tufts** (1877), ...	11,155.10	
264.87	**Benjamin Wadsworth** (1737), .	277.51	
	PRIZE FUNDS.		
1,493.17	**James Gordon Bennett** (1893), .	1,524.39	
	Francis Boott (1904), ...	10,134.23	
30,191.44	**Bowdoin** Prizes for Dissertations (1791), ...	30,835.80	
3,504.73	**Boylston** Prizes for Elocution (1817),	3,416.92	
5,238.34	**Coolidge** Debating (1899), ...	5,288.19	
100.00	**Dante** (balance	50.00	
1,954.49	**Edward Hopkins** Gift for "Deturs" (1718) (balance), ...	1,803.18	
1,115.73	**Sales** (1892), ...	1,078.96	
2,545.45	**John O. Sargent** (1889), ...	2,566.85	
7,000.00	**George B. Sohier** (1890), ...	7,000.00	
3,384.51	**Charles Sumner** (1874), ...	3,545.97	
3,699.03	**Robert N Toppan** (1894), . . .	3,725.47	
2,215.00	**Philip Washburn** (1899) , . . .	2,170.66	
104,286.62	**David A. Wells** (1901), ...	110,276.60	4,208,748.04
	LIBRARY FUNDS.		
2,132.83	**Bowditch** (1861), ...	$2,135.66	
133.80	**Bright** (balance), ...	112.42	
612.20	Fund of the **Class of 1851** (1899),	641.39	
602.80	" " " **1851 (C. F. Dunbar's** Gift) (1899), ...	631.56	
27,744.03	**Edwin Conant** (1892), ...	27,792,28	
25,953.22	**Constantius** (1886), ...	25,940.46	
5,311.89	**Denny** (1875), ...	5,313.80	
5,317.02	**Farrar** (1871), ...	5,346.85	
3,207.43	**Haven** (1844), ...	3,263.35	
10,049.01	**Hayes** (1885), ...	10,055.18	
5,244.23	**Hayward** (1864), ...	5,290.77	
578.02	**R. M. Hodges** (balance), ...	745.25	
2,371.89	**Hollis** (1781	2,347.46	
2,169.95	**Homer** (1871), ...	2,181.50	
500.00	**Jarvis** (1885), ...	517.29	
5,297.53	**Lane** (1863	5,270.15	
26,571.17	**Lowell** 1881), ...	26,492.00	
60,478.15	**Minot** (1870), ...	60,607.32	
$6,041,461.34	. . Amounts carried forward, . . .	$184,684.69	$5,983,540.58

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$6,041,461.34	. . Amounts brought forward,	$184,684.69	$5,983,540.58
7,150.89	**Lucy Osgood** (1873),	7,147.16	
6,995.40	**Mary Osgood** (1860),	7,013.71	
	Price Greenleaf Income for Books (balance),	283.86	
3,951.97	**Sales** (1892),	3,950.15	
5,313.10	**Salisbury** (1858),	5,318.82	
20,089.13	**Sever** (1878),	20,357.27	
3,981.56	**Shapleigh** (1801),	3,949.87	
69.31	**George B. Sohier** (balance),	45.23	
10,576.94	Subscription for Library (1859),	10,501.24	
37,605.05	**Sumner** (1875	37,516.98	
5,081.17	**Kenneth Matheson Taylor** (1899),	5,142.13	
11,925.34	**Daniel Treadwell** (1885),	12,228.33	
5,243.89	**Ichabod Tucker** 1875),	5,285.36	
	Wales Income for Books (balance),	175.50	
15,871.24	**Walker** (1875),	15,932.40	
5,299.44	**Ward** (1858	5,287.54	
259.35	**Waterston** Gift (balance),	271.70	
20,105.66	**J. Huntington Wolcott** (1891),	20,104.08	
100,000.00	**Eben Wright** (1883),	100,000.00	
1,447.10	Sundry Gifts (unexpended bals.),	1,232.20	
149.03	Sundry balances,	320.26	446,748.48
	DIVINITY SCHOOL FUNDS.		
22,727.90	Divinity School (balance),	$14,172.65	
71,427.02	New Endowment 1879),	71,427.02	
17,000.00	**Oliver Ames** 1880)	17,000.00	
525.00	**Hannah C. Andrews** (1836),	525.00	
890.00	**Daniel Austin** (1880),	890.00	
1,000.00	**Adams Ayer** (1869),	1,000.00	
7,875.00	**Joseph Baker** (1876),	15,275.00	
174.10	Beneficiary money returned (balance),	182.40	
4,050.35	**Rushton Dashwood Burr** (1894),	4,243.54	
37,583.74	**Bussey** Professorship (1862),	37,583.74	
2,177.95	**Joshua Clapp** (1836)	2,177.95	
5,000.00	**Edwin Conant** (1892),	5,000.00	
25,544.37	**Dexter** Lectureship (1810),	25,544.37	
50,780.89	**Frothingham** Professorship (1892),	53,203.14	
1,050.00	**Abraham W Fuller** (1847),	1,050.00	
911.34	**Lewis Gould** (1852),	911.34	
754.85	**Louisa J. Hall** (1893),	788.52	
6,008.43	**Hancock** Professorship (1765),	6,008.43	
76,885.81	**Charles L. Hancock** (1891),	76,885.81	
5,000.00	**Haven** (1898	5,000.00	
1,050.00	**Samuel Hoar** (1857),	1,050.00	
10,000.00	**Henry P. Kidder** (1881),	10,000.00	
9,184.69	**Henry Lienow** (1841),	9,184.69	
$6,660,178.35	. . Amounts carried forward,	$359,103.60	$6,430,289.06

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$6,660,178.35	. . Amounts brought forward, . . .	$359,103.60	$6,430,289.06
1,050.00	**Caroline Merriam** (1867), . . .	1,050.00	
16,015.81	**Parkman** Professorship (1814), .	16,015.81	
505.55	**John W. Quinby** (1888), ...	529.69	
1,000.00	**Abby Crocker Richmond** (1881),	1,000.00	
1,000.00	**John L. Russell** (1890), . . .	1,000.00	
10,000.00	**William B. Spooner** (1890), . .	10,000.00	
40,000.00	**Thomas Tileston** of New York Endowment (1879), ...	40,000.00	
5,250.00	**Mary P. Townsend** (1861), . .	5,250.00	
2,100.00	**Winthrop Ward** (1862), ...	2,100.00	
54,845.73	**Winn** Professorship (1877), . . .	55,345.73	
525.00	Gift for Divinity Hall Chapel alterations, ...		

SCHOLARSHIP AND BENEFICIARY FUNDS.

	Robert Charles Billings Prize (1904), ...	2,509.92	
13,231.33	**Abner W. Buttrick** (1880), . . .	13,229.12	
5,668.65	**Thomas Cary** (1820), ...	5,659.06	
2,728.76	**George Chapman** (1834), . . .	2,758.93	
4,456.69	**Joshua Clapp** (1839), ...	4,489.29	
14,958.26	**Jackson** Foundation (1835), . . .	14,978.42	
5,400.43	**J. Henry Kendall** (1863), . . .	5,458.01	
3,452.03	**Nancy Kendall** (1846), ...	3,476.69	
1,050.00	**William Pomroy** (1835), ...	1,050.00	545,004.27

LAW SCHOOL FUNDS.

236,882.74	Law School (balance), ...	$281,556.95	
3,533.97	**James Barr Ames** Prize (1898),	3,705.23	
67,921.78	**Bemis** Professorship (1879), . . .	71,161.66	
23,979.82	**Bussey** " (1862), . . .	23,979.82	
15,750.00	**Dane** " (1829), . . .	15,750.00	
501.97	**Hughes** Loan (1903), ...	525.92	
47,021.25	Law School Book (1882), ...	47,021.25	
	Law School Exhibition, ...	75.00	
100,000.00	Law School Library (1898), ...	100,000.00	
8,340.81	**Royall** Professorship (1781), . . .	8,340.81	
1,389.92	Scholarship money returned (balance),	1,967.22	
94,994.97	**Weld** Professorship (1882), . . .	94,994.97	649,078.83

LAWRENCE SCIENTIFIC SCHOOL FUNDS.

758.37	**Edward Austin** Loans repaid (bal.),	$724.20	
30,686.85	**John B. Barringer** (1873), . . .	30,686.85	
	George H. Emerson Scholarship (1903) (balance)	475.00	
5,579.93	**George A. Gardner** (1892), . .	5,634.60	
$7,480,758.97	. . Amounts carried forward, . . .	$37,520.65	$7,624,372.16

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$7,480,758.97	. . Amounts brought forward, . . .	$37,520.65	$7,624,372.16
10,708.10	**Hennen Jennings** Scholarship (1898),	10,818.87	
61,536.43	**Abbott Lawrence** (1859), . . .	61,536.43	
50,375.00	**James Lawrence** 1865), ...	50.375.00	
456.21	**Lawrence** Scientific School Loans repaid (balance	360.55	
40,805.73	Professorship of Engineering (1847),	40,805.73	
25,000.00	**Arthur Rotch** (1895), ...	25,000.00	
5,306.97	**Stuart Wadsworth Wheeler** (1898),	5,614.91	
50.00	**Lawrence** Scientific School Association Scholarship (balance), . . .	150.00	232,182.14

MUSEUM OF COMPARATIVE ZOÖLOGY FUNDS.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
29,034.40	Museum of Comparative Zoölogy (bal.),	$28,154.73	
297,933.10	**Agassiz** Memorial (1875	297,933.10	
7,594.01	Teachers' and Pupils' 1875), . . .	7,594.01	
5,519.15	**Virginia Barret Gibbs** Scholarship (1892), ...	5,532.41	
50,000.00	**Gray** Fund for Zoölogical Museum (1859), ...	50,000.00	
108,386.93	**Sturgis Hooper** (1865), ...	108,464.41	
7,740.66	**Humboldt** (1869), ...	7,740.66	
5,000.00	**Willard Peele Hunnewell** (1901),	5,000.00	
117,469.34	Permanent (1859), ...	117,469.34	627,888.66

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY FUNDS.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
11,579.79	**Hemenway** Fellowship (1891), .	$12,132.16	
28,355.56	**Peabody** Building (1866), ...	28,355.56	
47,335.10	**Peabody** Collection (1866), . . .	47,335.10	
47,529.77	**Peabody** Professor (1866), . . .	47,555.07	
30,164.15	**Thaw** Fellowship (1890), ...	30,173.37	
10,347.01	**Henry C. Warren** Exploration (1899), ...	10,375.56	
5,000.00	**Susan Cornelia Warren** (1902),	5,000.00	
5,413.02	**Robert C. Winthrop** Scholarship (1895), ...	5,671.22	
20,621.90	**Huntington Frothingham Wolcott** (1891), ...	20,675.57	207,273.61

MEDICAL SCHOOL FUNDS.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
46,173.58	Medical School (balance), ...	$30,414.50	
11,261.86	**Edward Austin** (Bacteriological Laboratory) (1899), ...	11,093.38	
25,512.68	**Edward M. Barringer** (1881), .	25,512.68	
6,212.24	**J. Ingersoll Bowditch** (1889), .	6,111.37	
$8,599,181.66	. . Amounts carried forward, . . .	$73,131.93	$8,691,716.57

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$8,599,181.66	. . Amounts brought forward, . .	$73,131.93	$8,691,716.57
2,563.14	**Boylston** Fund for Medical Books (1800), ...	2,161.85	
20,854.68	**John B. & Buckminster Brown** Endowment (1896)	21,349.46	
92,338.38	**Caroline Brewer Croft** (1899),	92,551.59	
380,987.73	**Calvin** and **Lucy Ellis** (1899), .	381,845.29	
101,702.24	**George Fabyan** (1896), ...	101,885.42	
1,836.08	**Samuel E. Fitz** (1884), ...	1,836.08	
2,500.00	**F. B. Greenough** (Surgical Research) (1901)	2,922.83	
19,192.65	**Jackson** Medical (1859), ...	19,192.65	
1,759.78	Medical Library (1872), ...	1,843.73	
52,900.33	**William O. Moseley** (1897), . .	52,923.66	
38,750.00	New Subscription (1888), ...	38,750.00	
9,335.94	**Dr. Ruppaner** (1897), ...	9,335.94	
50,000.00	**Geo. C. Shattuck** (1853), . . .	50,000.00	
5,681.98	Surgical Laboratory (1897), ...	6,871.42	
15,765.11	**Mary W. Swett** (1884), ...	15,765.11	
20,000.00	**Samuel W. Swett** (1884), . . .	20,000.00	
2,000.00	**Quincy Tufts** (1879), ...	2,000.00	
14,441.68	**Warren** Fund for Anatomical Museum (1848), ...	14,032.96	
41,872.00	**Charles Wilder** (1900), ...	41,908.00	
34,007.72	**Henry Willard Williams** (1893),	35,629.90	
	Gifts for Anatomical Research (bal.),	509.68	
923.62	Gifts for Pathological Dep't Library (balance), ...	688.23	
2,890.50	Sundry Gifts (unexpended balances),	1,885.51	
	FELLOWSHIP FUNDS.		
5,345.14	**Geo. Cheyne Shattuck** Memorial (1891), ...	5,375.10	
5,659.76	**Charles Eliot Ware** Memorial (1891), ...	5,704.74	
5,302.25	**John Ware** Memorial (1891), . .	5,330.16	
	SCHOLARSHIP FUNDS.		
5,107.25	**Lucius F. Billings** (1900), . . .	5,150.85	
5,756.04	**D. W. Cheever** (1889), ...	5,780.60	
3,135.44	**Cotting** Gift (1900), ...	3,159.98	
2,787.69	**Orlando W. Doe** (1893), ...	2,820.68	
61.05	**John Foster** income for Medical Students (balance), ...	151.27	
5,733.47	**Lewis** and **Harriet Hayden** (1894),	5,783.12	
6,466.45	**C. M. Jones** (1893), ...	6,424.88	
5,332.27	**Alfred Hosmer Linder** (1895),	5,386.61	
	Joseph Pearson Oliver (1904), .	8,584.48	
5,642.09	**Charles B. Porter** (1897), . . .	5,711.21	
$9,567,814.12	. . Amounts carried forward, . . .	$1,054,384.92	$8,691,716.57

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$9,567,814.12	. . Amounts brought forward, . . .	$1,054,384.92	$8,691,716.57
4,671.05	**Charles Pratt Strong** (1894), .	4,753.86	
6,393.55	**Isaac Sweetser** (1892), ...	6,548.54	
5,250.26	**John Thompson Taylor** (1899),	5,300.69	
5,354.62	**Edward Wigglesworth** (1897), .	5,410.05	
	PRIZE FUNDS.		
3,685.35	**Boylston** (1803), ...	3,773.63	
6,812.30	**William H. Thorndike** (1895),	7,137.23	1,087,308.92
	MEDICAL SCHOOL UNDERTAKING FUNDS.		
	Robert Bacon, ...	$89,293.73	
104,898.05	**Robert C. Billings** (1900), . . .	109,301.69	
25,375.40	**George Fabyan** (addition of 1903),	26,585.79	
101,563.89	**George Higginson** Professorship (1902), ...	101,908.49	
25,000.00	**Jackson** Professorship (addition of 1902), ...	25,000.00	
	J. Pierpont Morgan Gift, . . .	160,694.91	
370,776.56	**Henry L. Pierce** (1898), ...	388,462.62	
51,267.48	**Proctor** (1903), ...	53,576.58	
863,875.59	**John D. Rockefeller** Gift (1902),	1,071,366.41	
126,629.80	**David Sears** Gift (1902), ...	55,406.28	
26,000.00	**Shattuck** Professorship (addition of 1902), ...	26,000.00	
104,484.98	**Stillman** Professorship (1902), . .	109,468.91	
4,639.40	School of Comparative Medicine (1899),	4,860.68	
5,201.34	Gift for Pathological Laboratory, . .	5,351.52	2,227,277.61
	DENTAL SCHOOL FUNDS.		
29,899.71	Dental School (balance), ...	$30,464.99	
2,255.85	Dental School Endowment (1880), .	2,265.85	
23,000.00	**Henry C. Warren** Endowment (1889),	23,000.00	
20,802.33	Gifts for Building (1892), ...	21,804.73	77,535.57
	OBSERVATORY FUNDS.		
50,357.83	Advancement of Astron. Science (1901),	$50,385.00	
20,641.14	Advancement of Astron. Science (1902),	21,554.91	
11,018.16	Anonymous Gift (1902), ...	8,468.37	
5,000.00	**Thomas G. Appleton** (1884), .	5,000.00	
2,500.00	**J Ingersoll Bowditch** (1889), .	2,500.00	
200,000.00	**Uriah A. Boyden** (1887), . . .	200,000.00	
248.26	**Draper Memorial** (balance), . .	270.93	
2,000.00	**Charlotte Harris** (1877), ...	2,000.00	
45,000.00	**Haven** (1898), ...	45,000.00	
21,000.00	**James Hayward** (1866), ...	21,000.00	
50,000.00	Observatory Endowment (1882), . .	50,000.00	
50,000.00	**Paine** Professorship (1886), . . .	50,000.00	
$11,943,417.02	. . Amounts carried forward, . .	$456,179.21	$12,083,838.67

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$11,943,417.02	. . Amounts brought forward, . .	$456,179.21	$12,083,838.67
273,932.07	**Robert Treat Paine** (1886), . .	273,932.07	
110,293.88	**Edward B. Phillips** (1849), . .	110,293.88	
12,849.83	**Josiah Quincy** (1866), ...	13,462.77	
37,376.21	**David Sears** (1845)	38,267.63	
13,380.00	**Augustus Story** (1871), ...	13,380.00	
132.96	Gift for publishing lunar photographs,	42.35	905,557.91

BUSSEY INSTITUTION FUNDS.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
27,759.48	**Bussey** Institution (balance), . .	$28,566.18	
22,607.97	Woodland Hill (1895), ...	19,225.38	47,791.56

ARNOLD ARBORETUM FUNDS.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
123,030.00	**Arnold** Arboretum (1899), ...	$124,095.00	
159,702.10	**James Arnold** (1872), ...	160,082.99	
14,349.48	Arboretum Construction Gifts (bal.), .	19,050.52	
	Robert Charles Billings (1904),	12,500.00	
22,703.59	**William L. Bradley** (1897), . .	23,790.12	
	Bussey Fund for the Arnold Arboretum (1903), ...	2,308.06	341,826.69

OTHER FUNDS FOR SPECIAL PURPOSES.

PHILLIPS BROOKS HOUSE.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
10,506.66	**Phillips Brooks** House Endowment (1901), ...	$10,506.66	
10,969.65	**Ralph H. Shepard** (1900), . . .	11,024.22	
6,173.81	**Ralph H. Shepard** Memorial (1898),	6,468.31	
5,554.95	**John W.** and **Belinda L. Randall** (1897), ...	5,819.92	

WILLIAM HAYES FOGG ART MUSEUM.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
222.39	**Fogg** Art Museum (balance), . .	108.53	
50,000.00	**William Hayes Fogg** (1892), .	50,000.00	
16,458.39	**Gray** Fund for Engravings (1858),	16,243.66	
16,738.33	**William M. Prichard** (1898), .	16,678.30	
33,264.40	**John Witt Randall** (1892), . . .	33,963.98	

STILLMAN INFIRMARY.

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
7,715.17	**Stillman** Infirmary (balance), . .	7,447.10	
50,000.00	**Robert Charles Billings,** for **Stillman** Infirmary (1903), . .	50,000.00	
5,328.63	Free Bed Fund of the **Class of 1868** (1898), ...	5,328.63	
539.38	Free Bed Fund for **Stillman** Infirmary (1900)	539.38	
3,000.00	**Herbert Schurz** Memorial Free Bed (1903), ...	3,000.00	
2,645.64	**Henry P. Walcott** (1901), . . .	2,645.64	
$12,980,651.99	. . Amounts carried forward, . .	$219,774.33	$13,379,014.83

Principal, Aug. 1, 1903.		Principal, July 31, 1904.	
$12,980,651.99	. . Amounts brought forward, . .	$219,774.33	$13,379,014.83
	CLASS FUNDS.		
1,309.53	Fund of the **Class of 1834** (1887),	1,364.32	
7,666.96	" " " **1844** (1896),	7,982.63	
3,725.00	" " " **1853** (1887),	3,725.00	
	" " " **1856** (1904),	7,678.87	
	CONSTRUCTION GIFTS.		
48,219.56	Gifts for Improvements and Additions to The Soldier's Field (1901), . .		
421.74	Brighton Marsh Fence (balance), . .	421.74	
117,013.40	**Emerson** Hall, " . .	152,685.01	
1,456.01	Semitic Building, " . .	1,106.29	
2,458.24	**John Simpkins** Hall, " . .	1,232.47	
	George Smith Bequest (1904), .	257,607.87	
50,000.00	**Stillman** Infirmary (Contagious Ward) (balance), ...	69,190.30	
10,000.00	Gift for new University Library Building (balance), ...	20,436.10	
3,222.68	University Museum Building (balance),	1,460.12	
	SUNDRY FUNDS.		
480,556.21	**Edward Austin** (1899), ...	484,189.87	
50,000.00	**Bright** Legacy (1880), ...	50,000.00	
27,910.96	Bursar's Sundry Accounts (balance),	18,470.27	
392,710.18	**Bussey** Trust (1861), ...	392.710.18	
161,035.05	**Calvin** and **Lucy Ellis** Aid (1899),	161,380.99	
3,171.50	**John Foster** (1840), ...	3,171.50	
584,450.18	Gains and Losses for General Investments (1891), ...	585,643.23	
788,865.31	**Price Greenleaf** (1887), ...	788,865.31	
29,939.33	**Henry Harris** (1883), ...	29,939.33	
1,261.78	**Harvard** Memorial Society (1898),	1,321.98	
51,059.99	**Robert Troup Paine** (1880), . .	52,561.44	
42,000.00	**James Savage** (1873), ...	42,000.00	
377.96	Gifts for Cuban Teachers, ...	277.96	
2,494.00	Sundry balances, ...	87.27	3,355,284.38

FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.

16,642.59	**Daniel Williams** (1716), ...	$16,655.24	
4,901.55	**Sarah Winslow** (1790), ...	4,798.65	21,453.89
$15,863.521.70			$16,755,753.10

Changes in the Funds during the year ending July 31, 1904.

Total amount of Funds and balances, July 31, 1904, as before stated, ...		$16,755,753.10	
Total amount of Funds and balances, August 1, 1903, as before stated, ...		15,863,521.70	
Showing a total increase during the year of			$892,231.40
Which is made up as follows: —			
Gifts forming new Funds or increasing old ones, .		$633,988.55	
Increase of Funds established during the year, . .		30,439.54	
Credit balances created, ...		172,301.64	
Gain from change of investments, ...		13,028.11	
Increase more than decrease of Funds (excluding the Insurance and Guaranty Fund) and balances, which appear both at the beginning and the end of the year, ...		122,810.57	
		$972,568.41	
Deduct from this amount			
Sundry balances used up, ...	$49,593.95		
Decrease of Insurance and Guaranty Fund, by excess of expenditures over income, in University, College, and Library accounts, ...	30,743.06	80,337.01	$892,231.40

Net increase of Funds and balances as above, . . .	$338,579.86
Less decrease as above, ...	80,337.01
Leaving amount of the net increase of the Funds and balances, excluding gifts for capital account, ...	$258,242.85

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. Gifts for capital account, gifts for immediate use and the income of every Fund held by the University are given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be a general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 104.

TABLE No. I.

THE UNIVERSITY.

RECEIPTS.

Gifts for capital account.		
Band Music Fund, ...	$1,143.00	
Henry S. Nourse Bequest, ...	44,671.45	
Riverside Fund, ...	6,000.00	$51,814.45
Income of the following Funds: —		
Band Music, ...	$36.35	
Andrew Bigelow, ...	236.11	
Stanton Blake, ...	238.50	
Charlotte F. Blanchard, ...	227.58	
Samuel D. Bradford, ...	250.42	
John W. Carter, ...	596.25	
Thomas Cotton, ...	7.39	
John Cowdin, ...	1,613.93	
George B. Dorr, ...	4,927.20	
George Draper, ...	2,058.91	
Robert H. Eddy, ...	2,708.74	
Harvard Ellis, ...	4,828.43	
J. D. W. French, ...	253.86	
Gore, ...	981.24	
John C. Gray, ...	1,062.20	
Henry Harris (½ income), ...	714.05	
Walter Hastings, ...	1,214.51	
George Baxter Hyde, ...	238.50	
Insurance and Guaranty, ...	3,734.08	
Leonard Jarvis, ...	804.78	
Henry P. Kidder, ...	477.00	
Joseph Lee, ...	424.88	
Theodore Lyman, ...	477.00	
Israel Munson, ...	751.28	
Henry S. Nourse (part), ...	434.49	
Francis E. Parker, ...	4,835.89	
Amounts carried forward, ...	$34,133.57	$51,814.45

TABLE NO. I, THE UNIVERSITY, CONTINUED.

RECEIPTS.

Amounts brought forward,		$34,133.57	$51,814.45
Income of the following Funds (*continued*): —			
William Perkins,		1,431.00	
Henry L. Pierce Residuary (part),		2,646.16	
President's,		3,033.63	
Retiring Allowance,		17,478.09	
John L. Russell,		1,114.75	
Isaac Sweetser,		2,237.75	
Seth Turner,		238.50	
Henry Villard,		2,290.11	
William F. Weld,		4,248.81	68,852.37
Balance remaining after dividing the net income among the Funds,		$656.05	
Care of the **Sarah Winslow** Fund,		5.85	
Sale of catalogues, calendars, directories, &c.,		1,103.86	
" sand,		226.58	
Use of houses by College officers,		1,500.00	
Use of land by **Harvard** Union,		1,260.00	
Gifts for St. Louis Exposition expenses,		930.00	
" fences in College Yard, for Commencement Day,		205.00	
Unrestricted gift,		25.00	
Part of appropriation for exhibition cases returned,		30.50	5,942.84
William Hayes Fogg Art Museum.			
Income of Funds.			
William Hayes Fogg Art Museum, balance,		$10.59	
William Hayes Fogg,		2,385.00	
Gray Fund for Engravings.			
Interest,	$785.05		
Sale of Catalogues,	5.00	790.05	
William M. Prichard,		798.40	
John Witt Randall,		1,586.69	
Mary R. Searle,		90.77	
		$5,661.50	
Sale of photographs and catalogue,		16.60	5,678.10
Semitic Museum.			
Income of Gifts for Semitic Collection,			340.07
Germanic Museum.			
Gift for opening on Sundays,			175.00
Phillips Brooks House.			
Income of Funds.			
Phillips Brooks House Endowment,		$501.18	
Ralph H. Shepard,		523.27	
Ralph Hamilton Shepard Memorial,		294.50	1,318.95
Amount carried forward,			$134,121.78

TABLE NO. I, THE UNIVERSITY, CONTINUED.

RECEIPTS.

Amount brought forward,		$134,121.78
Stillman Infirmary.		
Income of Funds.		
Robert Charles Billings,	$2,385.00	
Free Bed Fund of the **Class of 1868,**	254.19	
Free Bed Fund for **Stillman** Infirmary,	25.71	
Herbert Schurz Memorial Free Bed,	143.10	
Stillman Infirmary,	337.53	
Henry P. Walcott,	126.21	
Samuel Ward (part),	665.43	
	$3,937.17	
Receipts from Students,	6,588.76	10,525.93
		$144,647.71

PAYMENTS.

Overseers' Expenses.			
Printing President's Annual Report,		$1,058.89	
" Treasurer's " "		338.38	
" other reports, ballots, etc.,		173.40	
Advertising,		97.09	
Auditing Treasurer's accounts,		150.00	
Other expenses,		26.57	$1,844.33
Office Expenses.			
President's,			
Clerical services,	$802.64		
Other expenses,	590.49	$1,393.13	
Treasurer's,			
Clerical services,	$1,381.50		
Rent of safes,	775.00		
Other expenses,	810.41	2,966.91	
Bursar's,			
Clerical services,	$3,793.49		
Other expenses,	1,303.96	5,097.45	
Publication Agent's,			
Clerical and other services,	$1,671.20		
Other expenses,	890.61	2,561.81	
Inspector of Grounds and Buildings',			
Clerical and other services,	$865.00		
Other expenses,	199.38	1,064.38	
Janitor's,		48.89	
Corporation Rooms (fuel, rent, &c.),		2,545.99	15,678.56
Amount carried forward,			$17,522.89

Table No. I, The University, continued.

PAYMENTS.

Amount brought forward, ...			$17,522.89
Salaries.			
President,			
From the University, ...	$6,000.00		
" President's Fund, ...	2,979.85		
" Thomas Cotton Fund, ...	7.25	$8,987.10	
Treasurer, ...		6,000.00	
Comptroller, ...		5,000.00	
Bursar, ...		4,000.00	
Assistant Bursar, ...		2,000.00	
Secretary to the President, ...		2,500.00	
Secretary of the Board of Overseers, ...		200.00	
Commencement Marshal, ...		100.00	
Chairman of the Appointment Committee, ...		2,079.17	
Publication Agent, ...		2,500.00	
Inspector of Grounds and Buildings, ...		2,000.00	
Clerks, Treasurer's office, ...		3,800.00	
Bursar's Assistant, ...		1,800.00	40,966.27
Retiring Allowances.			
From Retiring Allowance Fund, ...		$17,478.09	
" University income, ...		203.69	17,681.78
Memorial Hall and Sanders Theatre.			
Repairs, ...		$135.39	
Insurance, ...		508.17	
Fuel, lighting, furniture, cleaning, &c., ...		254.90	
Work on windows, ...		507.65	1,406.11
General Expenses.			
Repairs and improvements, ...		$2,425.98	
Labor, ...		6,214.19	
Watering streets and driveways, ...		481.50	
Telephone tolls and rentals, ...		57.26	
Advertising, ...		85.00	
Insurance, ...		40.00	
Watchmen, ...		2,732.12	
Commencement Day expenses, ...		481.63	
Annual Catalogue, ...		2,719.94	
Calendar, ...		219.35	
Plank walks, ...		152.60	
Driveways and gravel walks, ...		134.53	
Fence painting, construction, and repairs, ...		537.74	
Diplomas, ...		28.50	
Legal services and expenses, ...		111.16	
Receptions, ...		232.69	
Amounts carried forward, ...		$16,654.19	$77,577.05

TABLE NO. I, THE UNIVERSITY, CONTINUED.

PAYMENTS.

Amounts brought forward,		$16,654.19	$77,577.05
General Expenses (*continued*).			
Conference, Association of American Universities,		40.00	
Mercantile agency,		850.00	
Taxes on **Harvard** Union,	$4,309.50		
Less repaid by **Harvard** Union,	4,309.50		
Renewing Watchman's clock line,		353.76	
St. Louis Exposition expenses,		5,626.77	
Freight, supplies, and sundries,		293.98	23,818.70
Payments made from University income on the following accounts: —			
Phillips Brooks House,		$1,702.61	
William Hayes Fogg Art Museum,		2,652.54	
Peabody Museum of American Archaeology and Ethnology,		1,295.31	
Semitic Museum. Curator,	$500.00		
Expenses,	1,284.84	1,784.84	
Germanic Museum, Expenses,		1,042.09	
Stillman Infirmary, Expenses,		1,331.31	
School of Veterinary Medicine.			
Gas,	$24.00		
Less hospital fees received,	20.57	3.43	9,812.13
William Hayes Fogg Art Museum.			
Payments of $2,652.54, made from University income as above stated, and payments from the income of Funds as follows: —			
William Hayes Fogg, Director,	$500.00		
Collections and expenses,	1,885.00	$2,385.00	
Gray Fund for Engravings, Curator,	$250.00		
Collections,	612.26		
Expenses,	142.52	1,004.78	
William M. Prichard, collections,		858.43	
John Witt Randall, Curator,	$250.00		
Collections,	208.80		
Expenses,	428.31	887.11	
Mary R. Searle, books,		63.20	
From balance and sundry receipts,		141.05	5,339.57
Semitic Museum.			
Payments of $1,784.84, made from University income, as above stated, and payments from gifts for Semitic Collection, amounting to			6,308.77
Germanic Museum.			
Payments of $1,042.09, made from University income, as above stated, and payments from gift for opening on Sundays,			175.00
Amount carried forward,			$123,031.22

TABLE NO. 1, THE UNIVERSITY, CONTINUED.

PAYMENTS.

Amount brought forward, ...		$123,031.22
Phillips Brooks House.		
Payments of $1,702.61, made from University income as above stated, and payments for furniture, receptions, &c., from the income of Funds as follows:—		
Phillips Brooks House Endowment, ...	$501.18	
Ralph H. Shepard, ...	468.70	969.88
Stillman Infirmary.		
Payments of $1,331.31 made from University income as above stated, and payments from the income of Funds, as follows:—		
Robert Charles Billings, ...	$2,385.00	
Free Bed Fund of the **Class of 1868,**	254.19	
" " for **Stillman** Infirmary, . . .	25.71	
Herbert Schurz Memorial Free Bed, ...	143.10	
Stillman Infirmary, ...	337.53	
Henry P. Walcott, ...	126.21	
Samuel Ward, ...	665.43	
	$3,937.17	
From receipts from students, ...	6,588.76	10,525.93
		$134,527.03

TABLE NO. II.

THE COLLEGE.

RECEIPTS.

Gifts for Capital Account.		
Francis Boott Fund, ...	$10,000.00	
Borden Scholarship Fund (additional), ...	170.00	
Asa Gray Memorial Fund (additional), ...	100.00	
George Silsbee and **Ellen Sever Hale** Fund,	5,000.00	
Lectures on Political Economy Fund (additional), .	35.00	
Arthur T. Lyman Fund, ...	25,000.00	
Music Department Fund, ...	1,003.40	
The Philadelphia Scholarship Fund, ...	10,100.00	
Swift Scholarship Fund (additional), ...	1,000.00	
David Ames Wells Fund (additional), ...	944.41	
Jerome Wheelock Fund, ...	10.00	
Josiah Dwight Whitney Scholarship Fund, .	5,000.00	
Mary L. Whitney Scholarship Fund (additional),	1,194.50	$59,557.31
Amount carried forward, ...		$59,557.31

Table No. II, The College, continued.

RECEIPTS.

Amount brought forward,			$59,557.31
Income of Funds for Instruction, and Gifts for Salaries.			
Alford Professorship,		$1,323.63	
John B. Barringer,		1,463.77	
Boylston Professorship,		1,351.67	
Class Subscription,		7,176.28	
Paul Dudley,		165.04	
Eaton Professorship (part),		4,587.52	
Eliot Professorship,		1,031.28	
Eliot " (**Jon. Phillips'** Gift),		350.00	
Calvin and **Lucy Ellis** Aid (part),		3,472.79	
Erving Professorship,		166.95	
Fisher "		1,716.77	
Henry Flynt,		19.65	
Fund for Permanent Tutors,		774.65	
Godkin Lecture,		583.37	
Gospel Church (½ income),		154.36	
Asa Gray Professorship,		1,023.21	
Gurney (part),		8,321.44	
Hersey Professorship (⅜ income),		578.61	
Hollis " (Divinity),		1,646.51	
Hollis " (Mathematics),		178.74	
Ingersoll Lecture,		283.39	
Abbott Lawrence,		2,935.27	
James Lawrence,		2,402.89	
Lectures on Political Economy,		503.43	
Henry Lee Professorship,		5,168.01	
Thos. Lee, for Hersey Professorship,		1,037.19	
Thos. Lee, for Reading,		753.52	
McLean Professorship,		2,054.11	
William Belden Noble Lectures.			
Interest,	$1,079.26		
Sales,	1.00	1,080.26	
Daniel H. Peirce,		673.95	
Perkins Professorship,		1,001.70	
Plummer "		1,193.45	
Pope "		2,504.25	
Professorship of Engineering,		1,946.45	
Professorship of Hygiene (part),		6,795.59	
Nelson Robinson Jr. (part),		9,950.00	
Arthur Rotch,		1,192.50	
Rumford Professorship,		2,688.80	
Gurdon Saltonstall,		2,862.00	
Smith Professorship,		1,103.78	
Josiah Stickney,		611.08	
Amounts carried forward,		$84,827.76	$59,557.31

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,	$84,827.76	$59,557.31
Income of Funds for Instruction, and Gifts for Salaries (*continued*).		
Unknown Memorial (part),	3,013.84	
Wales Professorship (part),	1,500.00	
Henry C. Warren (part),	4,300.00	
Sylvester Waterhouse,	266.83	
Jerome Wheelock,	.38	
Gifts for salaries and lectures,	2,575.00	96,483.81
Income of Fellowship Funds, and Gifts for Fellowships.		
Edward Austin (part),	$2,000.00	
Austin Teaching (part),	10,000.00	
Cercle Français de l'Université Harvard (gift),	700.00	
George W Dillaway,	240.84	
Ozias Goodwin Memorial,	535.77	
Harris,	517.26	
Indic Philology (Henry C. Warren Fund (part)	200.00	
John Thornton Kirkland,	524.18	
Henry Lee Memorial,	554.80	
Charles Eliot Norton,	600.00	
Robert Treat Paine,	608.08	
John Parker,	2,722.71	
Nelson Robinson Jr.,	1,000.00	
Rogers,	1,561.22	
Henry Bromfield Rogers Memorial,	547.21	
South End House (gifts),	550.00	
John Tyndall,	589.57	
James Walker,	545.40	
Whiting,	1,087.80	25,084.84
Income of Scholarship Funds, and Gifts for Scholarships.		
Abbot,	$181.26	
Alford (accumulating),	94.35	
Austin (part), Architecture,	600.00	
Austin (part), Landscape Architecture,	300.00	
Austin (part), for Teachers,	2,000.00	
Bartlett,	256.57	
Bassett,	271.89	
Bigelow,	623.24	
Borden (accumulating),	115.91	
Bowditch,	5,417.43	
Bright,	1,330.64	
Browne,	184.12	
Morey Willard Buckminster,	248.27	
Amounts carried forward,	$11,623.68	$181,125.96

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward, ...	$11,623.68	$181,125.96
Income of Scholarship Funds, and Gifts for Scholarships (*continued*).		
Burr, ...	1,582.73	
Ruluff Sterling Choate, ...	291.92	
Class of 1802, ...	394.62	
" **1814**, ...	151.92	
" **1815 (Kirkland)**, ...	311.19	
" **1817**, ...	216.74	
" **1828**, ...	166.48	
" **1835**, ...	234.16	
" **1841**, ...	243.65	
" **1852 (Dana)**, ...	243.60	
" **1856**, ...	750.56	
" **1867**, ...	224.81	
" **1877**, ...	241.60	
" **1883**, ...	267.27	
Crowninshield, ...	566.81	
Warren H. Cudworth (gift), ...	600.00	
Francis H. Cummings, ...	270.89	
George and **Martha Derby**, ...	264.26	
Julius Dexter, ...	239.84	
Orlando W. Doe, ...	132.89	
Education (gift), ...	500.00	
William Samuel Eliot, ...	261.73	
George H. Emerson (from Trustee), ...	1,000.00	
Joseph Eveleth (part), ...	1,268.87	
Fall River, ...	102.36	
Farrar, ...	298.60	
Richard Augustine Gambrill, ...	543.02	
Charles Haven Goodwin, ...	363.38	
Benjamin D. Greene, ...	202.15	
Price Greenleaf, ...	3,000.00	
Harvard Club of Buffalo (gift), ...	200.00	
John Appleton Haven, ...	481.24	
William Hilton (part), ...	767.15	
Ebenezer Rockwood Hoar, ...	512.77	
Levina Hoar for the town of Lincoln, ...	300.08	
Hodges (part), ...	282.91	
Hollis, ...	296.88	
Henry B. Humphrey, ...	518.88	
Hennen Jennings, ...	510.77	
C. L. Jones, ...	1,452.70	
Lawrence Scientific School Association (gift), .	150.00	
George Emerson Lowell, ...	493.22	
Amounts carried forward, ...	$32,526.33	$181,125.96

TABLE No. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,		$32,526.33	$181,125.96
Income of Scholarship Funds, and Gifts for Scholarships (*continued*).			
Markoe,		244.08	
Matthews (½ net rents of Hall),		4,940.27	
William Merrick,		291.30	
Morey,		393.05	
Lady Mowlson,		275.42	
Howard Gardner Nichols,		267.60	
Lucy Osgood (accumulating),		262.25	
George Foster Peabody,		307.16	
Pennoyer,		297.21	
Perkins,		205.30	
Philadelphia,		160.61	
Wendell Phillips,		72.84	
Ricardo Prize (gift),		350.00	
Rodger,		52.99	
Henry Bromfield Rogers,		166.19	
Edward Russell,		272.27	
Sales,		267.31	
Saltonstall,		529.80	
Leverett Saltonstall,		404.26	
Mary Saltonstall,		328.89	
Savage,		300.00	
Sever,		156.98	
Sewall,		520.65	
Shattuck,		2,348.03	
Slade,		287.63	
Dunlap Smith,		200.00	
Story,		213.36	
Stoughton, Use of pasture,	$100.00		
Interest,	71.64	171.64	
Summer School in Geology (gifts),		600.00	
Swift,		140.05	
Thayer (part),		3,728.73	
Gorham Thomas,		200.58	
Toppan,		364.43	
Townsend,		1,223.07	
Walcott,		231.25	
Christopher M. Weld,		501.52	
Jacob Wendell,		253.72	
Whiting,		556.51	
Mary L. Whitney,		519.29	
Anonymous Gift for Scholarship use,		100.00	55,232.57
Amount carried forward,			$236,358.53

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amount brought forward,			$236,358.53
Income of Beneficiary and Loan Funds, and Repayments.			
Rebecca C. Ames,		$2,404.22	
Nathaniel Appleton,		26.19	
Edward Austin (part),		2,426.36	
Edward Austin Loans (L. S. S.), repayments,		431.23	
Frank Bolles Memorial,		84.19	
William Brattle,		71.88	
Thomas Danforth,		46.79	
Moses Day,		259.92	
Calvin and **Lucy Ellis** Aid (part),		3,100.00	
John Ellery,		18.70	
Exhibitions,		63.58	
Thomas Fitch,		35.11	
Ephraim Flynt,		20.18	
Henry Flynt,		7.01	
Henry Gibbs,		20.99	
John Glover,		138.95	
Price Greenleaf Aid (balance),		17,085.53	
Edward Holyoke,		16.36	
Robert Keayne,		111.14	
Bertram Kimball,		1,192.50	
Lawrence Scientific School Loans, repayments,		1,284.94	
Mary Lindall,		45.98	
Susan B. Lyman,		272.65	
Anne Mills,		9.83	
Munroe,		517.78	
Palfrey Exhibition,		96.45	
Dr. Andrew P. Peabody Memorial,		220.23	
Scholarship and Beneficiary Money Returned.			
Loans and Scholarships repaid,		2,017.40	
Joseph Sewall,		9.35	
Alexander W. Thayer (part),		213.61	
Quincy Tufts,		532.09	
Benjamin Wadsworth,		12.64	
Samuel Ward (part),		73.87	
Stuart Wadsworth Wheeler.			
Interest,	$253.14		
Loans repaid,	204.80	457.94	33,325.59
Income of Prize Funds, and gifts for prizes.			
James Gordon Bennett,		$71.22	
Francis Boott,		134.23	
Bowdoin Prizes for Dissertations,		1,440.11	
Boylston Prizes for Elocution,		167.19	
Coolidge Debating,		249.85	
Amounts carried forward,		$2,062.60	$269,684.12

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,		$2,062.60	$269,684.12
Income of Prize Funds, etc. *(continued)*.			
Edward Hopkins Gift for "Deturs."			
From Trustees,	$206.32		
Interest on unexpended balance,	93.21	299.53	
Sales,		53.23	
John O. Sargent,		121.40	
George B. Sohier (part),		250.00	
Charles Sumner,		161.46	
Robert N. Toppan,		176.44	
Philip Washburn,		105.66	
David Ames Wells,		5,045.57	8,275.89
Income of Funds for General Purposes.			
J. W. P. Abbot (accumulating),		$446.62	
John A. Blanchard,		50.08	
Jonathan Phillips,		1,502.55	
Charles L. Hancock (part),		139.56	2,138.81
Income of Sundry Funds for Special Purposes.			
Edward Austin (part) appropriation,		$50.00	
Botanic Department, ⅔ for Cryptogamic Herbarium,		474.38	
" " ⅓ for Laboratories of Botany,		237.19	
Francis James Child Memorial,		535.39	
Classical Publication Fund of the **Class of 1856,**			
Interest,	$338.91		
Sales,	129.77	468.68	
T. Jefferson Coolidge, for Research in Physics,		2,535.58	
George A. Gardner,		266.17	
George Silsbee and **Ellen Sever Hale,**		39.73	
Harvard Oriental Series,		718.70	
Joseph Lovering, for Physical Research,		380.07	
Musical Department,		45.89	
Nelson Robinson Jr. (part),		8,000.50	
George W. Sawin,		211.07	
John E. Thayer,		786.29	
Elizabeth Torrey,		56.91	
Henry Warren Torrey. Interest,	$531.47		
Sales,	157.34	688.81	
Unknown Memorial (part),		1,800.00	
Cyrus M. Warren,		313.77	
Henry C. Warren (part),		1,282.62	
Chauncey Wright,		47.22	18,938.97
Appleton Chapel.			
Income of Fund for Religious Services,		$49.32	
" **Increase Sumner Wheeler** Fund,		2,385.00	2,434.32
Jefferson Physical Laboratory.			
Interest on unexpended balance,		$103.89	
Income of Endowment,		3,577.50	3,681.39
Amount carried forward,			$305,153.50

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amount brought forward, ...			$305,153.50
Botanic Garden and Botanic Museum.			
Income of Botanic Department Fund (⅓ income), .		$1,185.94	
“ **Lowell** Fund, ...		3,167.61	
“ **John L. Russell** Fund (part), . . .		23.85	
“ Gifts for Cases, ...		28.27	
Use of house, ...		700.00	
Gifts for present use, ...		2,500.00	7,605.67
Gray Herbarium.			
Income of balance, ...		$90.63	
“ **Robert C. Billings** Fund, ...		715.50	
“ **Asa Gray** Memorial Fund, ...		1,551.11	
“ Herbarium Fund, ...		985.29	
“ **John L. Russell** Fund (part), . . .		71.55	
Asa Gray's copyrights, ...		829.14	
Sale of publications, ...		57.75	
“ duplicate books and pamphlets, ...		25.00	
“ contributions, ...		3.10	
“ check lists, ...		.66	
Commission on sales of Sullivant's Icones, ...		6.41	
Gifts for present use, ...		5,250.00	9,586.14
Sundry Gifts.			
For Department of Architecture.			
Gifts for equipment, ...	$10,000.00		
Interest, ...	204.65	$10,204.65	
Gift for a painting, ...	$1,000 00		
Interest, ...	10.63	1,010.63	
For Department of Chemistry. Gift, . .	$1,000.00		
Interest,	6.54	1,006.54	
“ “ “ The Classics, gifts,	$150.00		
Sales of publications,	258.13	408.13	
“ “ “ Education, gifts, ...		446.43	
“ “ “ Engineering. Gift, .	$2,000.00		
Interest,	14.10	2,014.10	
“ “ “ French, ...		12.35	
“ “ “ Geology and Geography, for lantern slides, ...		200.00	
“ “ “ Geology and Geography, exhibition rooms, ...		100.00	
“ “ “ Mathematics, for books, ...		15.00	
“ “ “ Political Economy.			
Maps and charts, interest, . .		2.86	
Books and materials, gifts, .		175.00	
“ “ “ Sanskrit, sales of publications, .		88.78	
“ Equipment for the course in Forestry, ...		200.00	
Amounts carried forward, ...		$15,884.47	$322,345.31

Table No. II, The College, continued.

RECEIPTS.

Amounts brought forward,			$15,884.47	$322,345.31
Sundry Gifts (*continued*).				
For Sugar-cane investigations. Interest,			17.95	
" Semitic Library. Interest,			18.63	
" Plantations in the College Yard. Interest,			74.48	
" Ethics of the Social Questions.				
Gift,		$2,500.00		
Interest,		70.26	2,570.26	
" Bermuda Biological Station.				
Gifts,		$1,000.00		
Use of cuts,		8.00		
Interest,		6.22	1,014.22	
" Research in Experimental Phonetics,			30.00	19,610.01
Receipts from Students.				
Tuition fees, regular courses,			$435,541.16	
" " Summer Schools,			25,151.67	
Examination fees.				
Admission,		$4,555.00		
Condition,		540.00	5,095.00	
Graduation fees,			9,320.00	
Laboratory fees.				
Botany,		$1,297.50		
Chemistry,		14,108.93		
Engineering,		1,930.60		
Geology,		975.00		
Hygiene,		915.00		
Mineralogy,		700.00		
Mining and Metallurgy,		2,205.67		
Philosophy,		80.00		
Physics,		4,870.00		
Zoölogy,		1,015.00	28,097.70	
Hemenway Gymnasium, use of lockers,			3,478.00	
College dormitories,		$102,227.13		
Less the following items: —				
Receipts from dormitories belonging to University Houses and Lands account,	$21,364.63			
One-half net income from Matthews Hall, credited under income of Scholarship Funds, &c.,	4,940.27	26,304.90	75,922.23	
Summer Camp, Engineering,			10,086.40	592,692.16
Amount carried forward,				$934,647.48

Table No. II, The College, continued.

RECEIPTS.

Amount brought forward,		$934,647.48
Sundries.		
Use of rooms by College Society,	$1,260.00	
" **Hemenway** Gymnasium by graduates and others,	112.29	
Sale of tickets to Commencement Dinner,	678.00	
" hymn books,	48.50	
" Annals of Mathematics,	394.92	
" Hand-book of American History,	461.48	
" Elementary Exercises in Physics,	294.96	
" **Harvard** Psychological Review,	366.00	
" other publications,	1,166.23	
" old examination papers,	442.62	
" wood,	90.00	
Sundry repayments,	3,166.82	8,481.82
		$943,129.30

PAYMENTS.

From Fellowship Funds and Gifts.		
Edward Austin,	$2,000.00	
Austin, Teaching,	10,000.00	
Cercle Français de l'Université **Harvard,**	600.00	
Ozias Goodwin Memorial,	450.00	
Harris,	500.00	
Indic Philology	500.00	
John Thornton Kirkland,	450.00	
Henry Lee Memorial,	675.00	
Charles Eliot Norton,	900.00	
Robert Treat Paine,	500.00	
John Parker,	2,450.00	
Nelson Robinson Jr.,	1,000.00	
Rogers,	1,812.50	
Henry Bromfield Rogers Memorial,	450.00	
South End House,	540.00	
John Tyndall,	1,125.00	
James Walker,	750.00	
Whiting,	800.00	$25,502.50
From Scholarship Funds and Gifts.		
Abbot,	$200.00	
Austin, Architecture,	600.00	
Austin, Landscape Architecture,	300.00	
Austin, for Teachers,	2,000.00	
Bartlett,	250.00	
Bassett,	270.00	
Amounts carried forward,	$3,620.00	$25,502.50

TABLE No. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,	$3,620.00	$25,502.50
From Scholarship Funds and Gifts (*continued*).		
Bigelow,	583.34	
Bowditch,	5,250.02	
Bright,	1,066.66	
Browne,	150.00	
Morey Willard Buckminster,	200.00	
Burr,	1,200.00	
Ruluff Sterling Choate,	275.00	
Class of 1802,	325.00	
“ 1814,	125.00	
“ 1815 (Kirkland),	166.66	
“ 1817,	116.66	
“ 1828,	100.00	
“ 1835,	116.66	
“ 1841,	200.00	
“ 1852 (Dana),	200.00	
“ 1856,	700.00	
“ 1867,	175.00	
“ 1877,	200.00	
“ 1883,	200.00	
Crowninshield,	375.00	
Warren H. Cudworth,	500.00	
Francis H. Cummings,	200.00	
George and Martha Derby,	166.66	
Julius Dexter,	175.00	
O. W. Doe,	100.00	
William Samuel Eliot,	250.00	
George H. Emerson,	525.00	
Joseph Eveleth,	1,066.66	
Fall River,	53.34	
Farrar,	250.00	
Richard Augustine Gambrill,	450.00	
Charles Haven Goodwin,	300.00	
Benjamin D. Greene,	100.00	
Price Greenleaf,	3,000.00	
Harvard Club of Buffalo,	133.34	
John Appleton Haven,	400.00	
Hilton,	375.00	
Ebenezer Rockwood Hoar,	400.00	
Levina Hoar, for the town of Lincoln,	250.00	
Hodges,	250.00	
Hollis,	225.00	
Henry B. Humphrey,	525.00	
Amounts carried forward,	$25,040.00	$25,502.50

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward, ...	$25,040.00	$25,502.50
From Scholarship Funds and Gifts (*continued*).		
Hennen Jennings, ...	400.00	
C. L. Jones, ...	1,133.34	
Lawrence Scientific School Association, ...	50.00	
George Emerson Lowell, ...	400.00	
Markoe, ...	150.00	
Matthews, ...	4,900.00	
William Merrick, ...	225.00	
Morey, ...	325.00	
Lady Mowlson, ...	225.00	
Howard Gardner Nichols, ...	133.34	
George Foster Peabody, ...	250.00	
Pennoyer, ...	75.00	
Rebecca A. Perkins, ...	150.00	
Wendell Phillips Memorial, ...	66.66	
Ricardo Prize, ...	350.00	
Henry Bromfield Rogers, ...	150.00	
Edward Russell, ...	225.00	
Sales, ...	233.34	
Saltonstall, ...	425.00	
Leverett Saltonstall, ...	325.00	
Mary Saltonstall, ...	300.00	
Savage, ...	300.00	
Sever, ...	150.00	
Sewall, ...	400.00	
Shattuck, ...	2,300.00	
Slade, ...	166.66	
Dunlap Smith, ...	133.34	
Story, ...	175.00	
Stoughton, ...	95.00	
Summer Scholarships in Geology, ...	600.00	
Thayer, ...	3,100.00	
Gorham Thomas, ...	150.00	
Toppan, ...	300.00	
Townsend, ...	1,250.00	
Walcott, ...	133.34	
Christopher M. Weld, ...	400.00	
Jacob Wendell, ...	200.00	
Whiting, ...	450.00	
Mary L. Whitney, ...	300.00	
University, Graduate School, ...	1,550.00	
" Lawrence Scientific School, ...	1,250.00	
Normal, " " "	500.00	49,435.02
Amount carried forward, ...		$74,987.52

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amount brought forward,			$74,937.52
From Beneficiary and Loan Funds.			
Rebecca C. Ames,		$2,285.00	
Edward Austin.			
Loans to L. S. S. students,	$1,785.00		
" Special "	641.36	2,426.36	
Edward Austin Loans (L.S.S.), from repayments,		465.40	
Frank Bolles Memorial,		35.00	
Moses Day,		259.92	
Calvin and **Lucy Ellis** Aid,		3,100.00	
Exhibitions,		63.58	
Price Greenleaf Aid,		15,317.97	
Bertram Kimball,		195.02	
Lawrence Scientific School Loans Repaid,		1,380.60	
Munroe,		466.29	
Palfrey Exhibition,		80.00	
Dr. Andrew P. Peabody Memorial,		115.00	
Quincy Tufts,		532.09	
Stuart Wadsworth Wheeler,		150.00	
Samuel Ward, special food for sick students,		73.87	
Scholarship and Beneficiary money returned,		1,194.76	28,140.86
From Prize Funds.			
James Gordon Bennett,		$40.00	
Bowdoin Prizes for Dissertations,		795.75	
Boylston Prizes for Elocution,		255.00	
Coolidge Debating,		200.00	
Dante,		50.00	
Edward Hopkins Gift for "Deturs,"		450.84	
Sales,		90.00	
John O. Sargent,		100.00	
George B. Sohier,		250.00	
Robert N. Toppan,		150.00	
Philip Washburn,		150.00	2,531.59
From Sundry Funds for Special Purposes.			
Edward Austin, appropriation,		$50.00	
Francis James Child Memorial, books,		478.91	
T. Jefferson Coolidge, research in Physics,		2,212.87	
Classical Publication Fund of the **Class of 1856.**			
Harvard Studies in Classical Philol.,	$999.30		
Interest on advances,	30.78	1,030.08	
George A. Gardner, photographs, etc., for Department of Geology,		211.50	
Harvard Oriental Series, publications,		785.50	
Joseph Lovering, research in Physics,		431.90	
Amounts carried forward,		$5,200.76	$105,609.97

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,		$5,200.76	$105,609.97
From Sundry Funds for Special Purposes (*continued*).			
George W. Sawin, books for Department of Mathematics,		99.44	
Barthold Schlesinger, books for Department of German,		31.72	
John E. Thayer, Quarterly Journal of Economics,		804.93	
Elizabeth Torrey, books for Department of History,		143.32	
Henry Warren Torrey, publications,		566.05	
Unknown Memorial, services and expenses,		1,539.05	
Cyrus M. Warren, research in Chemistry,		464.93	
Chauncey Wright, books for Department of Mathematics,		9.31	
Henry C. Warren, publications,		2,175.35	
Nelson Robinson Jr.			
Expenses of **Nelson Robinson Jr.** Hall,	$6,211.24		
Expenses in Department of Architecture,	1,772.99		
Expenses in Department of Landscape Architecture,	16.27	8,000.50	19,035.36
Appleton Chapel.			
Preaching and morning services,		$3,287.05	
Organist and Choir-master,		2,000.00	
Choir,		1,600.00	
Music and binding,		315.65	
Repairs and improvements,		131.71	
Fuel, gas, cleaning, &c.,		1,029.19	
Furniture,		14.68	
Repairing Organ,		47.00	8,425.28
Jefferson Physical Laboratory.			
Repairs and improvements,		$98.71	
Laboratory expenses,		4,637.57	
		$4,736.28	
Less amounts paid by the College (included among expenses on College Public Buildings), for			
Repairs and improvements,	$25.86		
Laboratory expenses,	600.00	625.86	
Payments from the income of the Endowment,			4,110.42
Hemenway Gymnasium.			
Salaries and wages,	$4,538.75		
Repairs and improvements,	274.91		
Amounts carried forward,	$4,813.66		$137,181.03

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward, . .	$4,813.66		$137,181.03
Hemenway Gymnasium (*continued*).			
Janitors and cleaning, ...	2,476.23		
Fuel, ...	910.69		
Apparatus, ...	350.00		
Insurance, ...	256.48		
Water, ...	247.84		
Lighting, ...	688.80		
Printing, ...	75.50		
Furniture, ...	2.40		
Stationery and postage, ...	41.87		
Telephone, ...	51.49		
Supplies and sundries, ...	49.63	$9,964.59	
Less amount received from other departments, .		1,312.06	8,652.53
Botanic Garden and Botanic Museum.			
Salaries, labor, repairs, materials, &c., ...		$7,595.61	
Interest on advances, ...		344.90	
Cases, from gift, ...		38.10	7,978.61
Gray Herbarium.			
Salaries, ...		$5,200.00	
Labor, repairs, materials, &c., ...		3,987.31	
Books and binding, ...		959.54	
Outlines of Botany, ...		400.00	10,546.85
Summer Schools.			
Salaries, ...		$20,530.14	
Secretary, ...		600.00	
Clerical services, ...		100.00	
Repairs and improvements, ...		9.59	
Janitors and cleaning, ...		154.16	
Fuel, ...		13.50	
Water, ...		23.43	
Printing, ...		815.10	
Furniture, ...		12.00	
Instruments and apparatus, ...		45.24	
Stationery and postage, ...		296.34	
Advertising, ...		531.20	
Services and wages, ...		533.28	
Remission of fees for instruction, ...		150.00	
Geological and Geographical courses, expenses, . .		232.13	
Reception, ...		165.00	
Travelling expenses, ...		60.00	
Engrossing certificates, ...		15.00	
Restaurant expenses, ...		1,303.91	
Supplies, materials, and sundries, ...		353.50	25,943.52
Amount carried forward, ...			$190,302.54

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amount brought forward,			$190,302.54
From Special Gifts.			
For Department of Architecture, books, casts, &c.,		$5,550.80	
" " Botany, sugar-cane investigation,		104.75	
" " Chemistry, books and improvements,		693.13	
" " The Classics, books,		394.57	
" " Education, books,		492.40	
" " Engineering, electrical apparatus and equipment,		3,784.27	
" " French, books,		12.35	
" " Geology and Geography, new lantern,		6.43	
" " Geology and Geography, lantern slides,		154.00	
" " German, books,		14.66	
" " History and Government, books,		9.45	
" " " " " apparatus,		6.47	
" " Mathematics, subscription for "Transactions,"		100.00	
" " Mathematics, books,		15.00	
" " Physics, research,		26.52	
" " Political Economy, books and material,		162.89	
" " Political Economy, maps and charts,		256.77	
" " Sanskrit, publications,		6.07	
" " Zoölogy, aquarium (part),		109.78	
" Lowell Memorial Library, books,		16.54	
" Music 7,		.20	
" Semitic Library, books,		157.95	
" The Ethics of the Social Questions.			
Sundry expenses,	$1,644.89		
Less charged to College salaries,	150.00	1,494.89	
" Social Questions Library, books,		101.29	
" Plantations in the College Yard,		304.91	
" Bermuda Biological Station,		365.73	
" Research in Experimental Phonetics,		2.54	
" Equipment for the course in Forestry,		68.18	14,412.54
Appropriations for collections, laboratories, &c.			
Anthropology (Prof. F. W. Putnam),		$100.00	
Botany (Prof. Thaxter),		100.00	
Chemistry (Prof. Sanger),		250.00	
Fine Arts and Drawing (Prof. Moore),		300.00	
Amounts carried forward,		$750.00	$204,715.08

Table No. II, The College, continued.

PAYMENTS.

Amounts brought forward, ...	$750.00	$204,715.08
Appropriations for collections, laboratories, &c. (*continued*).		
Geology and Geography (Asst. Prof. Ward), . . .	125.00	
" for publications (Prof. Davis), ...	100.00	
" " reprints (Prof. Davis), ...	50.00	
Mineralogy (Prof. Wolff), ...	300.00	
Mining and Metallurgy, running expenses (Prof. H. L. Smyth), ...	125.00	
Music (Prof. Paine), ...	125.00	
Petrography (Prof. Wolff), ...	50.00	
Physics (Prof. Trowbridge), ...	500.00	
Psychology (Prof. Münsterberg), ...	150.00	
" for publications, ...	366.00	
Zoölogy (Prof. Mark), ...	200.00	
" for publications, ...	250.00	
Laboratory fees appropriated, ...	26,167.10	
Fuel and services in Nat. Hist. Laboratories, . . .	1,500.00	
Fuel, services, &c., in Jefferson Ph. Laboratory,	600.00	31,358.10
Salaries.		
Instruction, ...	$436,619.35	
Deans, ...	4,500.00	
Chairmen of Committees, ...	1,600.00	
Medical Visitor, ...	3,000.00	
Recorders and Secretaries, ...	4,500.00	
Examination Proctors, ...	1,578.00	451,797.35
For College Public Buildings which are not valued in the Treasurer's books, the expenses of which are not separately entered in this table.		
Repairs, improvements, &c., ...	$7,751.73	
Cleaning and care, ...	12,413.53	
Fuel, ...	9,666.71	
Water, ...	386.20	
Lighting, ...	2,040.65	
Insurance, ...	1,167.72	
Electric power, ...	645.01	
Supplies and sundries, ...	409.12	
Telephones, ...	84.28	34,564.95
For College Dormitories, which are not valued in the Treasurer's books.		
Repairs and improvements, ...	$7,542.78	
Cleaning and care, ...	14,251.30	
Fuel, ...	2,877.63	
Water, ...	1,037.57	
Lighting, ...	3,509.24	
Insurance, ...	618.64	
Supplies and sundries, ...	354.36	30,191.52
Amount carried forward, ...		$752,627.00

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amount brought forward,			$752,627.00
General Expenses.			
Deans and Chairmen of Committees, clerical and office expenses,		$17,111.34	
Reading examination books,		3,628.17	
Services of proctors,		1,128.25	
" assistants to instructors,		6,657.13	
" undergraduates,		1,855.87	
" Head Guide in College grounds,		58.80	
Attendants in department laboratories,		2,140.00	
Attendants in department libraries,		1,254.40	
Admission examinations,		2,848.69	
Pews hired in Cambridge churches,		1,694.50	
Commencement Dinner,		779.35	
Printing office, expenses,	$21,968.31		
Less receipts,	13,380.50	8,587.81	
Books,		45.31	
Annals of Mathematics,		724.36	
Studies and Notes in Philology and Literature,		700.00	
Telephones,		21.55	
Furniture,		552.40	
Advertising,		1,385.81	
Watchmen,		1,641.30	
Legal services,		165.82	
Music, Class-Day,		125.00	
Receptions,		64.66	
Use of Grays 18 by English department,		100.00	
Services and expenses at Faculty meetings,		81.82	
" for Parietal Board,		7.00	
Blank books for examinations,		579.06	
Expenses of camp at Squam Lake (Engineering),		8,319.40	
Engineering courses in Pierce Hall,		9,349.31	
Travelling expenses in Mining 12,		315.40	
Travelling expenses in Economics 18,		57.70	
Expenses of Medical Visitor,		116.87	
" " delegates,		61.76	
Diplomas,		416.75	
Lighting College Yard,		182.50	
Rent and moving of pianos,		99.00	
Work on seals,		69.24	
Installation of Fire line, alarm boxes, etc.,		1,633.21	
Freight, and sundries,		50.49	74,610.03
			$827,237.03

Table No. III.

THE LIBRARY.

RECEIPTS.

Income of Book Funds, and Gifts and Receipts for the purchase of books.		
Nathaniel I. Bowditch,	$101.74	
Bright (½ income of the **Bright** Legacy),	1,192.50	
Edwin Conant (½ income),	330.85	
Constantius (½ income),	618.98	
Denny,	253.38	
Eliza Farrar,	253.62	
Price Greenleaf (part),	2,000.00	
Horace A. Haven,	152.98	
Francis B. Hayes,	479.34	
George Hayward,	249.23	
Thomas Hollis,	113.14	
Sidney Homer,	103.51	
Jarvis,	23.85	
Frederick A. Lane,	252.72	
Lowell,	1,267.44	
Charles Minot,	2,884.80	
Lucy Osgood,	341.10	
Mary Osgood,	333.66	
Henry L. Pierce (part),	2,192.66	
Francis Sales,	188.51	
Stephen Salisbury,	253.43	
Sever,	958.25	
Samuel Shapleigh,	189.94	
George B. Sohier (part),	83.90	
Subscription for Library,	504.52	
Charles Sumner,	1,793.76	
Kenneth Matheson Taylor,	242.36	
Daniel Treadwell,	568.82	
Ichabod Tucker,	211.64	
Henry W. Wales (part),	175.50	
James Walker,	757.05	
Thomas W. Ward,	252.76	
Executors of **Robert Waterston** (balance),	12.35	
J. Huntington Wolcott,	959.06	
Gifts for books,	3,596.71	
Sale of duplicate books,	295.56	
Received for books lost,	58.22	
Fines,	393.03	$24,640.87
Income of **R. M. Hodges** Fund, for publishing Bibliographical Contributions,		366.48
Amount carried forward,		$25,007.35

TABLE NO. III, THE LIBRARY, CONTINUED.

RECEIPTS.

Amount brought forward,		$25,007.35
Income of Funds for general purposes.		
Daniel Austin,	$297.17	
Edwin Conant (¾ income),	992.54	
Constantius (½ income),	618.98	
Fund of the **Class of 1851,**	29.19	
" " " " (C. F. Dunbar's Gift),	28.76	
Price Greenleaf,	15,085.54	
Henry T. Morgan,	3,909.06	
Henry L. Pierce (part),	2,600.00	
James Savage (¾ net income),	1,277.55	
Eben Wright,	4,770.00	29,608.79
Fees for use of Library,	$110.00	
Sale of Index Subject Catalogues,	2.75	
" Bibliographical Contributions,	17.91	
Subscription to a periodical repaid,	1.67	
Gifts for services,	860.00	
Gifts for binding,	521.00	1,513.33
		$56,129.47

PAYMENTS.

For Books, from the following Funds, Gifts, etc.	
Bowditch,	$98.91
Bright,	1,213.88
Conant,	282.60
Constantius,	631.74
Denny,	251.47
Farrar,	223.79
Price Greenleaf,	1,716.14
Haven,	97.06
Hayes,	473.17
Hayward,	183.90
Hollis,	143.78
Homer,	91.96
Jarvis,	6.56
Lane,	280.10
Lowell,	1,346.61
Minot,	2,755.63
Lucy Osgood,	344.83
Mary Osgood,	315.35
Pierce,	2,200.28
Sales,	190.33
Salisbury,	247.71
Sever,	690.11
Amount carried forward,	$13,785.91

TABLE NO. III, THE LIBRARY, CONTINUED.

PAYMENTS.

Amount brought forward, ...	$13,785.91	
For Books, from the following Funds, etc. (*continued*).		
Shapleigh, ...	223.93	
Sohier, ...	107.98	
Subscription Fund, ...	588.02	
Sumner, ...	1,881.83	
Taylor, ...	181.40	
Daniel Treadwell, ...	265.83	
Tucker, ...	170.17	
Walker, ...	695.89	
Ward, ...	264.66	
J. Huntington Wolcott, ...	960.64	
Special Gifts, ...	3,958.51	
Duplicate money and receipts for lost books, . . .	225.16	
Fines, ...	350.42	$23,660.35
From **R. M. Hodges** Fund.		
Publication of bibliographical contributions, ...		199.25
Salaries, ...	$15,250.00	
Services and wages, ...	19,129.83	
Services, from special gifts, ...	880.50	
Repairs and improvements, ...	532.08	
Janitors and cleaning, ...	867.12	
Fuel, ...	940.28	
Water, ...	13.58	
Lighting, ...	1,316.22	
Printing, ...	1,091.88	
Furniture, ...	212.41	
Stationery and postage, ...	712.28	
Telephone, ...	119.05	
Binding, ...	2,480.26	
Binding, from special gifts, ...	453.60	
Electric power, ...	96.17	
Freight, ...	172.38	
Supplies and sundries, ...	1,050.09	
Canvas awnings, ...	195.00	
Charges on von Maurer collection, ...	681.12	
Mounting maps, ...	66.30	
Moving books, ...	43.00	46,303.15
		$70,162.75

TABLE NO. IV.

DIVINITY SCHOOL.

RECEIPTS.

Gifts for Capital Account.			
Robert Charles Billings Fund for Prizes, . .		$2,500.00	
Joseph P. Baker Fund (additional), ...		7,400.00	$9,900.00
Income of Funds for Instruction, or for general purposes.			
Divinity School (balance), ...		$1,084.13	
New Endowment, ...		3,407.07	
Oliver Ames, ...		810.90	
Hannah C. Andrews, ...		25.04	
Daniel Austin, ...		42.45	
Adams Ayer, ...		47.70	
Joseph Baker, ...		375.64	
Beneficiary money returned (balance), ...		8.30	
Bussey Professorship, ...		1,792.76	
Benjamin Bussey Trust (½ net income), . . .		2,995.46	
Joshua Clapp, ...		103.89	
Edwin Conant, ...		238.50	
Dexter Lectureship, ...		1,218.45	
Frothingham Professorship, ...		2,422.25	
Abraham W. Fuller, ...		50.09	
Lewis Gould, ...		43.45	
John Hancock Professorship, ...	$286.58		
C. L. Hancock (part), ...	4,713.42	5,000.00	
Haven, ...		238.50	
Samuel Hoar, ...		50.09	
Henry P. Kidder, ...		477.00	
Henry Lienow, ...		438.12	
Caroline Merriam, ...		50.09	
Parkman Professorship, ...		763.96	
John W. Quinby, ...		24.14	
Abby Crocker Richmond, ...		47.70	
John L. Russell, ...		47.70	
William B. Spooner, ...		477.00	
Thomas Tileston of New York Endowment, .		1,908.00	
Mary P. Townsend, ...		250.43	
Winthrop Ward, ...		100.17	
Winn Professorship, ...		2,616.15	27,155.13
Income of Scholarship, Beneficiary and Prize Funds.			
Robert Charles Billings, for prizes, ...		$9.92	
Abner W. Buttrick, ...		631.12	
Thomas Cary, ...		270.41	
George Chapman, ...		130.17	
Joshua Clapp, ...		212.60	
Amounts carried forward, ...		$1,254.22	$37,055.13

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

RECEIPTS.

Amounts brought forward, . . .		$1,254.22	$37,055.13
Income of Scholarship, etc. (*continued*).			
Jackson Foundation, ...		713.50	
J. Henry Kendall, ...		257.58	
Nancy Kendall, ...		164.66	
William Pomroy, ...		50.09	2,440.05
Income of Book Funds.			
Rushton Dashwood Burr, ...		$193.19	
Louisa J. Hall, ...		36.01	229.20
Receipts from Students.			
Tuition fees, regular courses, ...		$6,265.00	
" " Graduate School, ...		624.50	
" " Special Students in Harvard College, .		646.00	
" " Summer School, ...		705.00	
Divinity Hall, ...		2,740.00	
Library fines, ...		7.95	10,988.45
Gift from Society for Promoting Theological Education,		$1,331.47	
Gifts for an **Emerson** tablet, ...		226.00	
" " a **Frederic Henry Hedge** tablet, ...		200.00	
" " " **Joseph Henry Thayer** tablet, ...		360.00	
" " repairs in the Chapel, ...		50.00	
Sale of tickets to Alumni Dinner, ...		42.00	
" Catalogues, ...		.50	2,209.97
			$52,922.80

PAYMENTS.

From Scholarship Funds.			
Thomas Cary, ...		$280.00	
George Chapman, ...		100.00	
Joshua Clapp, ...		180.00	
Jackson, ...		693.34	
J. H. Kendall, ...		200.00	
Nancy Kendall, ...		140.00	$1,593.34
From Beneficiary Funds.			
Abner W. Buttrick, ...		$633.33	
William Pomroy, ...		49.14	682.47
From **Louisa J. Hall** Fund, books, ...			2.34
Salaries for instruction, ...		$31,453.49	
Summer School. Salaries for instruction, .	$1,125.00		
Printing and other expenses,	337.10	1,462.10	
Secretary and Librarian, ...		1,093.75	
Services and wages, ...		779.59	
Library Assistants, ...		638.38	
Proctors, ...		40.00	
Amounts carried forward, ...		$35,467.31	$2,278.15

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

PAYMENTS.

Amounts brought forward, ...	$35,467.31	$2,278.15
Repairs, improvements, and labor, ...	4,836.37	
Cleaning and care of rooms, ...	1,720.96	
Fuel, ...	808.32	
Water, ...	98.50	
Lighting, ...	345.89	
Printing, ...	302.28	
Furniture, ...	57.11	
Stationery and postage, ...	111.58	
Telephone, ...	23.75	
Books, ...	694.84	
Binding, ...	10.25	
Advertising, ...	419.54	
Insurance, ...	798.83	
Diplomas, ...	158.75	
Alumni dinner, ...	50.00	
Proportion of expenses of Gymnasium, ...	86.36	
Tuning and repairing organ, ...	66.18	
American School for Oriental study and research in Palestine (4th payment), ...	100.00	
Subscriptions to the Fellowship in Christian Archaeology in the American School of Classical Studies in Rome,	50.00	
Emerson tablet, ...	226.00	
Sundries, ...	47.24	46,480.06
		$48,758.21

TABLE NO. V.

LAW SCHOOL.

RECEIPTS.

Income of Funds.	
Law School, balance, ...	$11,299.32
James Barr Ames Prize, ...	171.26
Bemis Professorship, ...	3,239.88
Benjamin Bussey Professorship, ...	1,143.85
Benjamin Bussey Trust (½ net income), . . .	2,995.47
Nathan Dane Professorship, ...	751.28
Hughes Loan, ...	23.95
Law School Book, ...	2,242.90
Law School Library, ...	4,770.00
Isaac Royall Professorship, ...	397.86
Weld "	4,531.26
Amount carried forward, ...	$31,567.03

TABLE NO. V, LAW SCHOOL, CONTINUED.

RECEIPTS.

Amount brought forward, ...		$31,567.03	
Income of Funds (*continued*).			
Scholarship money returned, scholarship and loan repaid with interest, ...	$511.00		
Interest, ...	66.30	577.30	$32,144.33
Gift for the purchase of books, ...		$300.00	
Gift for assisting a student, ...		75.00	375.00
Tuition fees, ...			108,450.00
Sale of Catalogue, ...			3.00
" books, ...			57.90
			$141,030.23

PAYMENTS.

Salaries for instruction, ...	$52,233.33	
Librarians and Assistants, ...	10,743.14	
Secretary, ...	590.64	
Services of proctors, ...	368.62	
Scholarships, ...	5,100.00	
Repairs and improvements, ...	342.27	
Janitor, cleaning, &c., ...	1,455.30	
Fuel, ...	774.62	
Water, ...	61.24	
Lighting, ...	1,439.72	
Printing, ...	285.58	
Furniture, ...	898.71	
Stationery and postage, ...	579.31	
Telephone, ...	89.60	
Books, ...	11,947.61	
Binding, ...	2,210.58	
Advertising, ...	110.00	
Insurance, ...	324.40	
Freight, ...	323.95	
Proportion of expenses of Gymnasium, ...	1,225.70	
Travelling expenses, ...	57.41	
Electric power, ...	50.00	
Catalogue, ...	231.34	
Diplomas, ...	220.00	
Expenses connected with proposed addition to Austin Hall, ...	10.00	
Association of American Law Schools, ...	10.00	
Work on portrait, ...	75.00	
Sundries, ...	510.46	$92,268.63

Table No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Gifts for Capital Account.		
F. B. Greenough Fund for Surgical Research (additional),	$300.00	
Joseph Pearson Oliver Scholarship Fund,	8,500.00	$8,800.00
Income of Funds for Instruction, or for general purposes.		
Medical School, balance,	$2,202.50	
Edward M. Barringer (part),	716.97	
John B. and **Buckminster Brown,**	994.78	
Caroline Brewer Croft (part),	1,500.00	
Calvin and **Lucy Ellis** (part),	17,151.17	
George Fabyan (part),	5,893.57	
Samuel E. Fitz,	87.58	
Henry Harris (½ income),	714.04	
Hersey Professorship (⅔ income),	385.74	
George Higginson,	4,844.60	
Jackson,	2,108.01	
William O. Moseley,	2,523.33	
New subscription,	1,848.38	
Dr. Ruppaner,	445.33	
George C. Shattuck,	3,486.06	
Mary W. Swett,	751.99	
Samuel W. Swett,	954.00	
Quincy Tufts,	95.40	
Henry Willard Williams,	1,622.18	48,325.63
Income of Fellowship Funds.		
Edward Austin (part) Teaching,	$2,000.00	
George Cheyne Shattuck Memorial,	254.96	
Charles Eliot Ware "	269.98	
John Ware "	252.91	2,777.85
Income of Scholarship Funds.		
Edward M. Barringer (part),	$500.00	
Lucius F. Billings,	243.60	
David Williams Cheever,	274.56	
Cotting Gift,	149.54	
Orlando W. Doe,	132.99	
Joseph Eveleth (part),	680.00	
John Foster, income for Medical Students every other year,	151.26	
Lewis and **Harriet Hayden,**	273.47	
William Hilton (part),	360.00	
Amounts carried forward,	$2,765.42	$59,903.48

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

RECEIPTS.

Amounts brought forward,		$2,765.42	$59,903.48
Income of Scholarship Funds (*continued*).			
C. M. Jones,		308.43	
Alfred Hosmer Linder,		254.34	
Joseph Pearson Oliver,		84.48	
Charles B. Porter,		269.12	
Charles Pratt Strong,		222.81	
Isaac Sweetser,		304.99	
John Thomson Taylor,		250.43	
Edward Wigglesworth,		255.43	4,715.45
Income of Prize Funds.			
Ward Nicholas Boylston,		$175.77	
William H. Thorndike,		324.93	500.70
Income of Sundry Funds and Gifts for special purposes.			
Edward Austin (Bacteriological Laboratory),		$537.20	
J. Ingersoll Bowditch,		296.31	
Ward Nicholas Boylston, for Medical Books,		122.26	
Caroline Brewer Croft (part),		694.79	
George Fabyan (part),		168.00	
F. B. Greenough (surgical research),		122.83	
Surgical Laboratory,		271.03	
Warren Fund for Anatomical Museum,		688.88	
Medical Library,		83.95	
Gifts for present use,		80.79	3,066.04
Gifts for present use,			16,195.00
Receipts from students.			
Tuition fees, regular courses,	$60,447.00		
" " graduate courses,	1,446.00		
" " Dental students,	5,400.00		
" " Summer courses,	4,772.50	$72,065.50	
Graduation fees,		3,900.00	
Matriculation fees,		360.00	
Examination fees,		522.00	
Laboratory fees.			
Chemistry,	$802.02		
Embryology,	513.00		
Operative Surgery,	228.00		
Physiology,	377.86		
Practical Anatomy,	898.00		
Surgery,	136.00	2,954.88	
Use of microscopes,		783.00	80,585.38
			$164,966.05

TABLE No. VI, MEDICAL SCHOOL, CONTINUED.

PAYMENTS.

From Fellowship Funds.			
Edward Austin, Teaching,		$2,000.00	
George Cheyne Shattuck Memorial,		225.00	
Charles Eliot Ware Memorial,		225.00	
John Ware Memorial,		225.00	$2,675.00
From Scholarship Funds.			
Edward M. Barringer,		$500.00	
Lucius F. Billings,		200.00	
David Williams Cheever,		250.00	
Cotting Gift,		125.00	
Orlando W. Doe,		100.00	
Joseph Eveleth,		680.00	
John Foster, income for Medical Students (bal.),		61.04	
Lewis and **Harriet Hayden,**		223.82	
William Hilton,		360.00	
C. M. Jones,		350.00	
Alfred Hosmer Linder,		200.00	
Charles B. Porter,		200.00	
Charles Pratt Strong,		140.00	
Isaac Sweetser,		150.00	
John Thomson Taylor,		200.00	
Edward Wigglesworth,		200.00	
Faculty Scholarships,		880.00	4,819.86
From Prize Funds.			
Ward Nicholas Boylston, Prize,		$75.00	
Advertising,		12.49	87.49
From Sundry Funds and Gifts for special purposes.			
Edward Austin (Bacteriological Laboratory),		$705.68	
J. Ingersoll Bowditch, Physiology,		397.18	
Ward Nicholas Boylston, Medical Books,		523.55	
Caroline Brewer Croft (part), cancer investigations,		623.00	
George Fabyan (part), services,		168.00	
Gifts for Anatomical Research,		496.63	
Gifts for Pathological Department Library,	$1,815.38		
Less paid for salaries,	700.00	1,115.38	
Surgical Laboratory,		1,281.59	
Warren Fund for Anatomical Museum,		1,097.60	
Sundry Gifts,	$7,644.48		
Less paid for salaries,	750.00	6,894.48	13,303.09
Appropriations.			
Anatomy,		$1,000.00	
Bacteriology,		500.00	
Chemistry,		761.18	
Amounts carried forward,		$2,261.18	$20,885.44

TABLE No. VI, MEDICAL SCHOOL, CONTINUED.

PAYMENTS.

Amounts brought forward,	$2,261.18	$20,885.44
Appropriations (*continued*).		
Clinical Medicine,	50.00	
Gynaecology,	25.00	
Histology and Embryology,	1,013.00	
Hygiene,	300.00	
Museum,	200.00	
Obstetrics,	200.00	
Pathology,	700.00	
Pharmacology and Therapeutics,	400.00	
Physiology,	3,931.20	
Surgery,	736.00	
Theory and Practice,	100.00	9,916.38
Graduate courses, fees repaid to Instructors,	$1,446.00	
Summer " " " "	5,280.00	6,726.00
Salaries for instruction,		100,075.00
General Expenses.		
Dean, and Secretary,	$500.00	
Clerical services,	1,780.00	
Repairs and improvements,	545.52	
Janitor and cleaning,	5,300.96	
Fuel,	2,235.87	
Water,	991.20	
Lighting and gas,	3,155.07	
Printing,	346.65	
Furniture,	78.34	
Instruments and apparatus,	31.00	
Stationery and postage,	234.03	
Telephone,	205.31	
Advertising and catalogues,	1,300.00	
Insurance,	59.00	
Proctors,	124.00	
Mechanics and laboratory attendants,	6,911.75	
Electric power,	1,128.62	
Diplomas,	57.00	
Time service,	25.00	
St. Louis Exposition,	1,500.00	
Legal expenses,	69.76	
Sundries,	444.13	
Supplies and material,	1,513.48	28,536.69
		$166,139.51

TABLE No. VI, CONTINUED.

Medical School Undertaking.

RECEIPTS.

Gifts received in 1903–04.			
Robert Bacon Fund (additional),		$60,000.00	
Mrs. Collis P. Huntington, for building,		102,087.00	
J. Pierpont Morgan, for buildings,		400,000.00	
John D. Rockefeller (additional),		163,791.13	
David Sears, for building,		80,000.00	
Unrestricted Gifts,		26,000.00	$831,878.13
Income of Funds and Gifts.			
Robert Bacon,		$3,230.72	
Robert C. Billings,		5,003.64	
George Fabyan (addition of 1903),	$1,210.39*		
George Higginson Professorship,	4,844.60*		
Jackson Professorship (addition of 1902),	1,192.50*		
J. Pierpont Morgan Gift,		817.79	
Henry L. Pierce,		17,686.06	
Proctor, for the Study of Chronic Diseases,		2,445.44	
John D. Rockefeller Gift,		43,699.69	
School of Comparative Medicine,		221.28	
David Sears Building Gift,		2,229.31	
Shattuck Professorship (addition of 1902),	$1,240.20*		
James Stillman Professorship,		4,983.93	
Gift for Pathological Laboratory,		248.09	
Real estate,		138.71	80,704.66
			$912,582.79

PAYMENTS.

From **Robert C. Billings** Fund, for Journal of Medical Research,		$600.00
Gift for Pathological Laboratory,		97.91
Proctor Fund for the study of Chronic Diseases,		136.34
Real Estate.		
Sewer assessment,	$428.57	
Legal services,	95.00	
Other expenses, surveys and plans,	1,251.95	1,775.52
Construction Expenses,		485,343.39
Interest on Advances,		18,958.03
		$506,911.19

* These items of income are entered in the Medical School table.

Table No. VII.

DENTAL SCHOOL.

RECEIPTS.

Gift for Capital Account.			
Dental School Endowment (additional),			$10.00
Income of Funds and Gifts.			
Dental School, balance,		$1,426.23	
Dental School Endowment,		107.66	
Henry C. Warren Endowment,		1,097.10	
Gifts for new building. Gift,	$10.00		
Interest,	992.40	1,002.40	3,633.39
Receipts from students.			
Tuition fees,	$18,460.00		
Less transferred to Medical School,	5,400.00	$13,060.00	
Examination fees,		405.00	
Laboratory fees,		2,288.91	
Use of microscopes,		99.00	
Chemistry, breakage, and supplies,		193.70	
Library fines,		.36	16,046.97
Fees from infirmary,			4,403.00
Sale of sweepings,		$24.01	
" gold and platinum,		187.21	
" scraps and old materials,		5.73	216.95
Unexpended balance of appropriations, returned,		$1.29	
United States duty, returned,		21.15	22.44
Gifts from officers of instruction in the Dental School,			2,883.50
" for immediate use,			54.00
			$27,270.25

PAYMENTS.

Salaries for instruction,	$12,420.00
Curator and Librarian,	150.00
Secretary,	300.00
Proctors,	100.00
Repairs and improvements,	2,194.34
Janitors and cleaning,	1,554.37
Fuel,	412.25
Water,	69.30
Lighting,	598.90
Printing,	206.17
Furniture,	132.47
Instruments and apparatus,	169.47
Stationery and postage,	245.00
Telephone,	147.90
Binding,	89.95
Advertising,	732.07
Amount carried forward,	$19,522.19

TABLE No. VII DENTAL SCHOOL, CONTINUED.

PAYMENTS.

Amount brought forward,	$19,522.19	
Insurance,	360.00	
Services and wages,	1,271.43	
Delegates' expenses,	128.72	
Legal expenses,	31.45	
Diplomas,	14.25	
Catalogue,	82.40	
National Association of Dental Faculties, dues,	35.00	
International Dental Congress, contribution,	50.00	
Supplies, &c.,	3,772.76	
Sundries,	424.37	$25,692.57

TABLE No. VIII.

MUSEUM OF COMPARATIVE ZOÖLOGY.

RECEIPTS.

Income of Funds.		
Museum of Comparative Zoölogy (balance),	$1,384.92	
Agassiz Memorial,	14,211.40	
Teachers and Pupils,	362.23	
Virginia Barret Gibbs Scholarship,	263.26	
Gray Fund for Zoölogical Museum,	2,385.00	
Sturgis Hooper,	5,141.73	
Humboldt,	369.25	
Willard Peele Hunnewell,	238.50	
Permanent Fund for Museum of Zoölogy,	5,603.27	
Henry L. Pierce,	4,770.00	$34,729.56
Use of lecture rooms by Radcliffe College,	$700.00	
Gifts for the purchase of books,	550.00	
Received for a lost book,	4.00	1,254.00
		$35,983.56

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds, &c.	
Balance of August 1, 1903 (part),	$879.67
Income of balance,	1,384.92
Agassiz Memorial,	14,211.40
Teachers and Pupils,	362.23
Gray,	2,385.00
Humboldt,	369.25
Willard Peele Hunnewell,	238.50
Permanent,	5,603.27
Amount carried forward,	$25,434.24

TABLE NO. VIII, MUSEUM OF COMPARATIVE ZOÖLOGY, CONTINUED.

PAYMENTS.

Amount brought forward, ...		$25,434.24	
Paid on the order of the Faculty of the Museum of Comparative Zoölogy, etc. (*continued*).			
Henry L. Pierce, ...		4,770.00	
Receipt for use of rooms, ...		700.00	
Receipt for a lost book, ...		4.00	
Gifts for the purchase of books, ...		550.00	$31,458.24
Virginia Barret Gibbs Scholarship, ...		$250.00	
Sturgis Hooper. Salary, ...	$5,000.00		
Expenses, ...	64.25	5,064.25	5,314.25
			$36,772.49

TABLE NO. IX.

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

RECEIPTS.

Income of Funds.		
Hemenway Fellowship, ...	$552.37	
Peabody Building, ...	1,425.73	
Peabody Collection, ...	2,379.97	
Peabody Professor, ...	2,379.97	
Thaw Fellowship, ...	1,158.12	
Henry C. Warren Exploration, ...	493.55	
Susan Cornelia Warren, ...	238.50	
Robert C. Winthrop Scholarship, ...	258.20	
Huntington Frothingham Wolcott, ...	983.67	$9,870.08
Use of heating plant, ...		75.00
Gifts for present use, ...		725.00
		$10,670.08

PAYMENTS.

Huntington Frothingham Wolcott Fund, specimens, . . .		$930.00
Thaw Fellowship, ...		1,148.90
Henry C. Warren Fund, explorations, ...		465.00
Salary of Professor and Curator, ...	$2,354.67	
Services and wages, ...	2,635.40	
Repairs and improvements, ...	56.83	
Janitor and cleaning, ...	1,031.07	
Fuel, ...	245.89	
Water, ...	25.00	
Lighting, ...	18.35	
Printing, ...	50.90	
Amounts carried forward, ...	$6,418.11	$2,543.90

TABLE NO. IX, PEABODY MUSEUM, CONTINUED.

PAYMENTS.

Amounts brought forward,	$6,418.11	$2,543.90
Furniture,	88.79	
Stationery and postage,	156.87	
Telephone,	32.80	
Books,	27.36	
Binding,	5.95	
Insurance on collections,	121.50	
Freight,	198.80	
Supplies,	180.92	
Sundries,	25.05	
Interest on advances,	156.18	
	$7,412.33	
Less amount paid from University income,	1,295.31	6,117.02
		$8,660.92

TABLE NO. X.

OBSERVATORY.

RECEIPTS.

Gift for Capital Account.			
Advancement of Astronomical Science (1902),			$1,500.00
Income of Funds and Gift.			
Advancement of Astronomical Science (1902).			
Interest (part),	$586.90		
Sales,	361.42	$948.32	
Anonymous Gift (1902),		331.51	
Thomas G. Appleton,		238.50	
J. Ingersoll Bowditch,		119.25	
Uriah A. Boyden,		9,509.42	
Charlotte Harris,		95.40	
Haven,		2,146.50	
James Hayward,		1,001.70	
Observatory Endowment,		2,385.00	
Paine Professorship,		2,385.00	
Robert Treat Paine,		13,066.56	
Edward B. Phillips,		5,261.02	
Josiah Quincy,		612.94	
James Savage (½ net income),		425.85	
David Sears,		1,782.84	
Augustus Story,		638.23	40,948.04
Mrs. Henry Draper, gift for special research (additional),		$10,000.00	
Interest,		11.83	10,011.83
Amount carried forward,			$52,459.87

Table No. X, Observatory, continued.

RECEIPTS.

Amount brought forward,		$52,459.87
Use of house by College officer,	$600.00	
Sale of Annals,	29.86	
" lantern slides,	1.00	
" grass,	35.00	
" time signals,	36.83	702.69
Carnegie Institution, for services of Observatory officers,		300.00
		$53,462.56

PAYMENTS.

From Anonymous Gift (1902), addition to brick building, &c.,		$2,881.30
" Advancement of Astronomical Science Fund (1902),	$1,945.38	
Less amount included in general expenses,	1,000.00	945.38
" **Uriah A. Boyden** Fund, supplies, apparatus, services, &c.,		8,951.83
" **Draper** Memorial, supplies, apparatus, services, &c.,	$9,989.16	
Less amount included in salaries,	2,500.00	7,489.16
" Gifts for publishing Lunar Photographs,		90.61
Salaries,	$16,500.00	
Services and wages,	6,918.16	
Repairs and improvements,	1,835.00	
Cleaning and care of Observatory,	658.93	
Labor,	1,482.00	
Fuel,	648.74	
Water,	66.51	
Lighting,	250.29	
Printing,	2,649.59	
Furniture,	212.92	
Instruments and apparatus,	406.30	
Stationery, postage, and telegraphing,	515.63	
Telephone,	127.22	
Books,	383.85	
Binding,	360.95	
Insurance,	597.00	
Supplies and materials,	897.09	
Freight,	382.57	
Sundries,	24.79	
Use of house,	90.00	
Electric power,	72.12	
Interest on advances,	168.14	35,247.80
		$55,606.08

TABLE No. XI.

BUSSEY INSTITUTION.

RECEIPTS.

Income of Funds.		
Bussey Institution (balance),	$1,324.10	
Bussey Trust (½ net income),	5,990.93	$7,315.03
Tuition fees,		2,550.00
Sale of wood, hay, and sundries,	$89.99	
" horses,	235.00	
Horticultural Departm't, prizes, sale of flowers, plants, &c.,	1,999.04	
Board of animals,	4,905.26	
Use of house by College officer,	600.00	7,829.29
		$17,694.32

PAYMENTS.

Salaries,	$8,000.00	
Services and wages,	3,010.73	
Repairs and improvements,	567.29	
Fuel,	523.00	
Gas,	39.90	
Water,	36.80	
Printing,	69.66	
Furniture,	23.95	
Stationery and postage,	6.51	
Books,	54.28	
Binding,	65.05	
Insurance,	209.50	
Horticultural Department, expenses,	2,274.01	
Grain, farming tools, &c.,	1,799.34	
Diplomas,	10.00	
Sundries,	197.60	$16,887.62

TABLE No. XII.

ARNOLD ARBORETUM.

RECEIPTS.

Gifts for capital account.			
Arnold Arboretum Fund (additional),		$1,065.00	
Robert Charles Billings Fund,		12,500.00	$13,565.00
Income of Funds and Gifts.			
Arnold Arboretum,		$5,889.14	
James Arnold,		7,617.78	
Robert Charles Billings,		486.50	
William L. Bradley. Interest,	$1,082.98		
Gift,	600.00	1,682.98	
Bussey, for the **Arnold** Arboretum,		110.09	
Gifts for construction,		308.32	16,094.81
Sale of grass and materials,		$713.75	
Gifts for present use,		2,100.22	
" construction,		5,000.00	7,813.97
			$37,473.78

TABLE No. XII, ARNOLD ARBORETUM, CONTINUED.

PAYMENTS.

William L. Bradley Fund, bibliography,	$596.45	
Salaries of Director and Assistant,	3,500.00	
Repairs and improvements,	129.32	
Labor,	4,561.74	
Fuel,	402.13	
Water,	49.00	
Printing,	35.66	
Furniture,	338.81	
Stationery and postage,	310.52	
Instruments and apparatus,	118.89	
Services and wages,	6,173.67	
Supplies, tools, and materials,	638.43	
Freight,	204.20	
Rent of land leased from Adams Nervine Asylum,	150.00	
Expenses of expeditions for collecting,	263.08	
St. Louis Exposition expenses,	250.49	
Sundries,	17.93	$17,740.32

TABLE No. XIII.

MISCELLANEOUS FUNDS.

Sundry Funds for Special Purposes.

Receipts.

Gifts for Capital Account.		
Fund of the **Class of 1856**,	$7,500.00	
George Smith Bequest,	257,550.66	$265,050.66
Income of Funds, Gifts, &c.		
Advancement of Astronomical Science (1901),		2,385.00
" " " " (1902) (part),		586.91
Edward Austin. Interest,	$22,922.52	
Loan to Special Students repaid,	87.50	
	$23,010.02	
Less appropriations as per Tables II and VI,	19,376.36	3,633.66
Bussey Trust, net income from Real Estate,		15,981.86
Class of 1834,		54.79
" **1844**,		315.67
" **1853**,		149.00
" **1856**,		178.87
Caroline Brewer Croft (part),		2,194.80
Eaton Professorship of the Science of Government (part),		190.05
Calvin and **Lucy Ellis** (part),		114.96
Calvin and **Lucy Ellis** Aid (part),		346.69
Amount carried forward,		$291,182.92

TABLE NO. XIII, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Funds for Special Purposes (*continued*).

Receipts.

Amount brought forward,		$291,182.92
Income of Funds, Gifts, &c. (*continued*).		
Gospel Church (½ income),		154.35
Gurney (part),		1,000.00
Charles L. Hancock (part),		43.71
Harvard Memorial Society,		60.20
Henry S. Nourse (part),		599.48
Robert Troup Paine (accumulating),		1,501.45
Professorship of Hygiene (part),		3,919.76
John W. and **Belinda L. Randall,**		264.97
Nelson Robinson Jr.,	$24,327.00	
Less amount entered in Table II,	18,950.50	5,376.50
George Smith Bequest,		86.91
Thayer Scholarship (part),		10.00
Alexander W. Thayer (part),		480.00
Charles Wilder,		1,908.00
Daniel Williams,		793.87
Sarah Winslow,		233.83
Woodland Hill,		749.32
		$308,365.27

Payments.

From the following Funds and Gifts.		
Advancement of Astronomical Science (1901), annuity,		$2,357.83
" " " " (1902) "		453.25
Bussey Trust. Annuities,	$4,000.00	
One half of the remaining income to the **Bussey** Institution,	5,990.93	
One quarter to the Divinity School,	2,995.46	
One quarter to the Law School,	2,995.47	15,981.86
Class of 1853, Secretary of the Class,		149.00
Caroline Brewer Croft, annuity,		2,153.38
Calvin and **Lucy Ellis,** taxes and expenses,		114.96
Calvin and **Lucy Ellis** Aid, plan,		.75
Eaton Professorship of the Science of Government, legal expenses,		190.05
Gifts for Cuban Teachers, expenses,		100.00
Gurney, annuities,		1,000.00
Charles L. Hancock, taxes on Chelsea real estate,		43.71
Henry S. Nourse.		
Legal and other expenses,	$349.48	
Annuity,	250.00	599.48
Professorship of Hygiene, annuity,		4,519.22
George Smith Bequest, express,		29.70
Thayer Scholarship, legal expenses,		10.00
Amount carried forward,		$27,703.19

TABLE NO. XIII, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Funds for Special Purposes (*continued*).

Payments.

Amount brought forward,		$27,703.19
From the following Funds and Gifts (*continued*).		
Alexander Wheelock Thayer, annuity,		480.00
Charles Wilder, annuity,		1.872.00
Daniel Williams.		
Treasurer of Mashpee Indians,	$519.30	
" " Herring Pond Indians,	261.92	781.22
Sarah Winslow,		
Teacher at Tyngsborough, Mass.,	$109.40	
Minister " " "	221.48	
Commission on income, credited to University,	5.85	336.73
Woodland Hill.		
Taxes,	$1,003.52	
Cost of wall on Walter Street (part),	388.50	
" land on Weld Street,	431.83	1,823.85
		$32,996.99

Construction Accounts.

Receipts.

Emerson Hall.		
Gifts,	$32,254.53	
Repayment by Treasurer of Committee of the unexpended part of the amount held by him for expenses,	999.90	
Interest,	5,637.58	$38,892.01
New Library Building. Gift,	$10,000.00	
Interest,	436.10	10,436.10
Semitic Building, interest,		47.82
John Simpkins Hall, interest,		24.23
Stillman Infirmary. Gift,	$25,000.00	
Interest (part),	2,009.58	27,009.58
University Museum, interest,		129.26
Gifts for Improvements and Additions to The Soldier's Field,		20,000.00
Stadium, Gift,		100,000.00
		$196,539.00

Payments.

Emerson Hall.		
Architects, services,	$3,220.25	
Express,	.15	$3,220.40
Semitic Building and furniture,		397.54
John Simpkins Hall, equipment,		1,250.00
Stadium. Construction,	$225,407.17	
Interest,	745.12	226,152.29
Stillman Infirmary. Construction,	$272.00	
Contagious Ward,	7,815.35	8,087.35
University Museum,		1,891.82
		$240,999.40

TABLE NO. XIII, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Accounts.

Receipts.

Bursar's Sundry Accounts,		$494,599.06
Advances from General Investments to		
Advancement of Astronomical Science (1902),	$277.17	
Botanic Department,	363.11	
Classical Publication Fund of the **Class of 1856,**	561.40	
Gift for Aquarium,	.40	
Hollis Book Fund,	6.21	
James Loeb's Gift (labor collection),	50.00	
Medical School Undertaking,	10,338.53	
Observatory,	2,090.68	
Shapleigh Book Fund,	2.30	
Stadium,	57,932.73	
Subscription Book Fund,	7.80	71,630.33
Gains and Losses for General Investments.		
Gain on purchase and sale of $25,000 Long Island R.R. Ref. M. 4's of 1949,	$596.53	
Gain on sale of $10,000 Philadelphia, Baltimore & Washington R.R. 1st M. 4's of 1943,	596.52	1,193.05
Gain from change of Special Investment.		
John Cowdin Fund.		
Gain on sale of **Cowdin** Estate,		11,835.06
Transfers to		
Books on Economics,		
from Political Economy Department Library Gifts,	$50.00	
Robert Bacon Fund,		
from Medical School Undertaking,	26,063.01	
Bussey Fund for the **Arnold** Arboretum,		
from Woodland Hill Fund,	4,898.06	
Woodland Hill Fund,		
from **Bussey** Fund for the **Arnold** Arboretum,	2,590.00	33,601.07
		$612,858.57

Payments.

Bursar's Sundry Accounts,		$504,039.75
Advances from General Investments, repaid by		
Uriah A. Boyden Fund,	$557.59	
Hayward Book Fund,	18.79	
Peabody Museum of American Archaeology and Ethnology,	1,081.85	
Nelson Robinson Jr. Equipment,	278.52	
Scholarship and Beneficiary Money Returned,	139.30	
South End House Fellowship (part),	10.00	2,086.05
Amount carried forward,		$506,125.80

TABLE NO. XIII, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Accounts (*continued*).

Payments.

Amount brought forward,		$506,125.80
Transfers from		
Bussey Fund for the **Arnold** Arboretum, to Woodland Hill Fund,	$2,590.00	
Medical School Undertaking, to **Robert Bacon** Fund,	26,063.01	
Woodland Hill Fund, to **Bussey** Fund for the **Arnold** Arboretum,	4,898.06	
Political Economy Library Gifts, to Books on Economics,	50.00	33,601.07
Sundry balances,		2,406.73
		$542,133.60

GENERAL SUMMARY OF THE TABLES.

Table.		Receipts.	Payments.
I.	University,	$144,647.71	$134,527.03
II.	College,	943,129.30	827,237.03
III.	Library,	56,129.47	70,162.75
IV.	Divinity School,	52,922.80	48,758.21
V.	Law School,	141,030.23	92,268.63
VI.	Medical School,	164,966.05	166,139.51
	" " Undertaking,	912,582.79	506,911.19
VII.	Dental School,	27,270.25	25,692.57
VIII.	Museum of Comparative Zoölogy,	35,983.56	36,772.49
IX.	**Peabody** Museum of American Archaeology and Ethnology,	10,670.08	8,660.92
X.	Observatory,	53,462.56	55,606.08
XI.	**Bussey** Institution,	17,694.32	16,887.62
XII.	**Arnold** Arboretum,	37,473.78	17,740.32
XIII.	Sundry Funds for Special Purposes,	308,365.27	32,996.99
	Construction Accounts,	196,539.00	240,999.40
	Sundry Accounts,	612,858.57	542,133.60
		$3,715,725.74	$2,823,494.34
		2,823,494.34	
	Net increase of the Funds and balances,	$892,231.40	
	Deduct gifts for capital account,	633,988.55	
	Balance, which is the net increase of Funds and balances, excluding gifts for capital account, as is also shown on page 58,	$258,242.85	

Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Accounts of the Treasurer.

The committees appointed by the Corporation and Overseers of Harvard College to examine the accounts of the Treasurer for the year ending July 31, 1904, have, with the assistance of an expert chosen by them, examined and audited the Cash-book and Journal covering the period from August 1, 1903, to July 31, 1904, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were on hand at the beginning of said year, or have been received by him during said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

HENRY P. WALCOTT,
ARTHUR T. CABOT,
Committee on the part of the Corporation.

MOSES WILLIAMS,
WILLIAM C. ENDICOTT,
ROBERT WINSOR,
GORDON ABBOTT,
G. ST. L. ABBOTT,
ADELBERT E. BUFFUM,
Committee on the part of the Board of Overseers.

BOSTON, January 4, 1905.

THE UNIVERSITY PUBLICATION

[*Entered at the Post-office, Boston, Mass., as Second Class mail matter, April 8, 1901.*
Act of July 16, 1894.]

Issued at Cambridge Station, Boston, Mass., twice a month from August to March inclusive, and six times a month from April to July inclusive.

These publications include :—

- The Annual Reports of the President and of the Treasurer.
- The Annual University Catalogue.
- The Annual Catalogues of the College and the several Professional Schools of the University; the Announcements of the several Departments; etc., etc.

THE NEW YORK PUBLIC LIBRARY
REFERENCE DEPARTMENT

This book is under no circumstances to be taken from the Building

form 419